

Ground spiders (Gnaphosidae; Araneae) of Crete (Greece). Taxonomy and distribution. I.

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Ground spiders (Gnaphosidae; Araneae) of Crete (Greece). Taxonomy and distribution. I. - The taxonomy and distribution of 22 species, belonging to the genera *Anagraphis*, *Poecilochroa*, *Berinda*, *Callilepis*, *Micaria*, *Pterotricha*, *Gnaphosa*, *Nomisia*, *Haplodrassus* and *Leptodrassus* of the family Gnaphosidae, are analyzed. In total, 5287 adult spiders were collected from 73 sites on Crete and the surrounding islands of Gavdos, Gavdopoula and Dia. Sites cover the main axis of each island and altitudes up to 2450m. Five species are recorded for the first time in Europe (*Anagraphis pallens*, *Berinda ensigera*, *Gnaphosa bithynica*, *Nomisia excerpta* and *Leptodrassus pupa*), four are recorded for the first time in Greece (*Poecilochroa senilis*, *Haplodrassus minor*, *Leptodrassus albidus*, *L. femineus*) and five are recorded for the first time in Crete (the previous species plus *Micaria albovittata*, previously reported from other parts of Greece). Two new species, *Leptodrassus hadjissaranti* sp. n. and *L. manolisi* sp. n., and the females of *Berinda amabilis* and *Haplodrassus creticus* are described, while some redescriptions, two new combinations (*Berinda ensigera* [from *Drassodes*] and *Haplodrassus creticus* [from *Drassodes*]) and four new synonymizations (*Drassodes flavomaculatus* = *Poecilochroa senilis*, *Talanites aculeatus* = *Berinda amabilis*, *Drassodes reimoseri* = *Berinda ensigera* and *Drassodes lithobius* = *Haplodrassus dalmatensis*) are also included.

Key-words: Araneae - Gnaphosidae - Crete - taxonomy - distribution.

INTRODUCTION

From a zoogeographical point of view, Greece is an important area, because its fauna is composed of the mixture of three different elements: namely, the European, the Asiatic and the African. These three elements have a different intensity, depending on the exact location. In Crete, an isolated island formation since the Pliocene

(5 m.y.a.) (Schule, 1993; Meulenkamp *et al.*, 1994) the last two elements have a greater importance than in the rest of Greece. Endemism is another component that has affected the Greek fauna greatly.

However, the knowledge of the arachnofauna of Greece is limited. Data have been based mainly on temporary visits of earlier researchers, such as Brulle (1832), Lucas (1853), Kulczynski (1903 a, b), Roewer (1928; 1959), Bristowe (1935), as well as contemporary ones: Brignoli (1981, 1984 and references therein, 1986), Deeleman-Reinhold (1971, 1985, 1989, 1993), Deeleman-Reinhold & Deeleman (1988); Wunderlich (1973 a, b; 1977; 1980 a, b; 1994 a, b, c, d, e, f), Thaler (1996, 1997), Thaler & Knoflach (1993, 1995), Thaler *et al.* (2000), Deltchev (1979), Metzner (1999). Apart from the first author (Chatzaki, 1998; Chatzaki *et al.*, 1998), two other Greek scientists have contributed to the study of spiders of Greece (Hadjissarantos, 1940; Paraschi, 1988). Species catalogues on a national or regional level are still unavailable for Greece.

Deltchev (1999) reports 642 species from Greece and 59 from Crete, out of which 156 (24%) and 42 (71%), respectively, are endemics. For Crete, the total number of species must be much higher, since on Gavdos (a small satellite island of Crete, covering 32 km²) alone we found 128 species (Chatzaki, 1998), out of which only 1% are Cretan endemics and 7% are Greek endemics (unpublished data). The total number of species reported from Crete is 204, but many of them are dubious and need to be revised. These great differences in numbers indicate the gaps that exist in our knowledge, not only on the spiders of Crete, but also the surrounding area in the eastern Mediterranean.

In this paper we present the taxonomy and distribution of the species, belonging to 10 genera of the family Gnaphosidae, on Crete. Gnaphosidae is the most abundant and one of the most diverse of all spider families on Crete. However, this family is not well represented in the spider literature of Crete, partly because of the nocturnal activity of many species and also because most of the researchers have focused on cave-dwelling spiders, rather than on epigeic ones. Several contributions have dealt with Gnaphosidae in the adjacent areas, i.e. Italy (Di Franco, 1986, 1993, 1994, 1996, 1997 a, 1997 b, 1998, 2000), Israel (Levy, 1995, 1998, 1999 a, b), North Africa (Dalmat, 1919; Denis, 1952; Di Franco, 1992 a, b; Bosmans & Janssen, 1999; Bosmans & Blick, 2000). These papers have revealed the importance of this family as far as abundance and diversity are concerned.

MATERIALS AND METHODS

In total, 59 sites were selected along the island of Crete, 11 sites on the island group Gavdos – Gavdopoula and 3 on the islet Dia (Fig. 1). In the results, the sites of these islands are included in the districts to which they belong, i.e. Sites 13-23 belonging to Gavdos, are included in the district of Chania, and Sites 52-54, belonging to Dia, are included in the district of Irakleio. Sites were selected in order to cover Crete from north to south, west to east and along the altitudinal gradients of the three mountain massifs of the island, Lefka Ori Mts., Psiloreitis Mts. and Lasithiotika Ori Mts. Apart from Gavdos-Gavdopoula (where all types of habitats were included),

most of the habitats selected on Crete are phrygana (plant communities that include dwarf, aromatic, thorny shrubs) and maquis. Few of them are situated close to permanent or temporary water reservoirs.

The spider material was collected by pitfall traps (12cm height, 9.5cm in diameter). The killing preservative was ethylene glycole. At each site, 15-20 traps were set and changed in two-month intervals. In most cases, only material from the period of high activity of Gnaphosidae, e.g., late spring to early autumn (Chatzaki *et al.*, 1998; Chatzaki, 1998), has been analyzed and presented here.

Identifications were carried out at the Natural History Museum of Crete (NHMC) and at the Zoological Institute of Innsbruck, Austria. All material presented here is part of the Ph.D. thesis of the first author and is deposited at the Natural History Museum of Crete. Material from the collection of Dr Hadjissarantos, deposited at the Zoological Museum of the Biological Department of Athens (ZMUA), and from the collection of Roewer, deposited at the Senckenberg Museum of Natural History, Frankfurt am Main (SMF), has also been examined. Voucher specimens of new and other species have been deposited in the Natural History Museum of Geneva (MHNG) and are indicated in brackets [MHNG].

The following abbreviations are used in the text: Identification: reference(s) used for the identification, TL: total length, PL: prosoma length, PW: prosoma width, OL: opisthosoma length, AME: anterior median eyes, ALE: anterior lateral eyes, PME: posterior median eyes, PLE: posterior lateral eyes, Ta: tarsus, Me: metatarsus, Ti: tibia, Pa: patella, Fe: femur, Co: coxa, d: dorsal, v: ventral, p: prolateral, r: retrolateral. All measurements are given in mm. All drawings presented here are by the first author.

SITE DESCRIPTIONS

CHANIA

Site 1 : Gramvousa peninsula, 350m, above the highest point of the road: phrygana (*Coridothymus capitatus*, *Calycotome villosa*, *Sarcopoterium spinosum* and sparse *Quercus coccifera*, *Pistacea lentiscus* and *Ceratonia siliqua*). Capture dates: a: 25/4/1996 - 26/6/1996; b: 26/6/1996 - 23/8/1996; c: 23/8/1996 - 29/10/1996.

Site 2: Gramvousa peninsula: phrygana on a small plateau, beneath Agios Sozos church, almost at sea level. Capture dates: a: 25/4/1996 - 26/6/1996; b: 26/6/1996 - 23/8/1996; c: 23/8/1996 - 29/10/1996; d: 29/10/1996 - 30/12/1996; e: 30/12/1996 - 14/3/1997; f: 15/3/1997 - 12/5/1997.

Site 3: Elafonisi: phrygana - maquis (*Juniperus oxycedrus*, *Pistacea lentiscus*, *Coridothymus capitatus* and *Ceratonia siliqua*) at the west side of the beach. Degradation is mainly due to touristic activities. Capture dates: a: 25/4/1996 - 26/6/1996; b: 26/6/1996 - 25/8/1996; c: 25/8/1996 - 29/10/1996; d: 29/10/1996 - 30/12/1996; e: 30/12/1996 - 13/3/1997; f: 13/3/1997 - 7/5/1997.

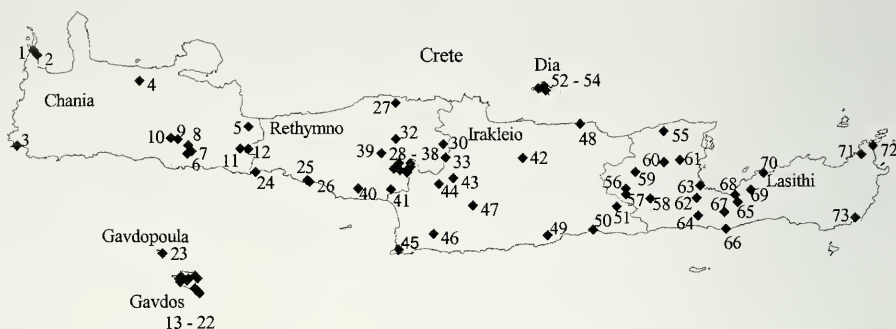


FIG. 1
Map of sampling sites.

- Site 4:** Agia lake: an overgrazed and intensively cultivated area. Pitfalls were set under *Platanus orientalis* and *Rubus* sp. Capture dates: a: 25/4/1996 - 26/6/1996; b: 26/6/1996 - 22/8/1996; c: 22/8/1996 - 30/10/1996.
- Site 5:** Kournas lake: south side of the lake, with *Phlomis fruticosa* and sparse *Quercus coccifera* along the site. Capture dates: a: 25/4/1996 - 25/6/1996; b: 25/6/1996 - 20/8/1996; c: 20/8/1996 - 30/10/1996.
- Site 6:** Lefka Ori Mts., 800m: an old mature forest of *Pinus brutia*, with very little undergrowth consisting mainly of *Quercus coccifera*. Capture dates: a: 18/10/1990 - 23/11/1990; b: 1/3/1991 - 28/3/1991; c: 28/3/1991 - 5/5/1991; d: 5/5/1991 - 8/6/1991; e: 8/6/1991 - 6/7/1991; f: 6/7/1991 - 4/8/1991; g: 4/8/1991 - 8/9/1991; h: 8/9/1991 - 5/10/1991; i: 5/10/1991 - 6/11/1991; j: 6/11/1991 - 7/12/1991; k: 7/12/1991 - 11/1/1992; l: 11/1/1992 - 8/3/1992; m: 9/3/1992 - 5/4/1992.
- Site 7:** Lefka Ori Mts., 1200m: a forest of *Cupressus sempervirens*, also containing *Quercus coccifera* and *Acer sempervirens*. Capture dates: a: 18/10/1990 - 23/11/1990; b: 1/3/1991 - 28/3/1991; c: 28/3/1991 - 5/5/1991; d: 5/5/1991 - 8/6/1991; e: 8/6/1991 - 6/7/1991; f: 6/7/1991 - 4/8/1991; g: 4/8/1991 - 8/9/1991; h: 8/9/1991 - 5/10/1991; i: 5/10/1991 - 6/11/1991; j: 7/11/1991 - 4/5/1992.
- Site 8:** Lefka Ori Mts., 1650m: plateau above the timberline, consisting of prostrate shrubs, mainly *Juniperus oxycedrus oxycedrus* and *Berberis cretica*, *Prunus prostrata*, *Satureja spinosa*. Vegetation is restricted to the wind shields and to small accumulations of the soil. Capture dates: a: 29/7/1990 - 1/9/1990; b: 1/9/1990 - 17/10/1990; c: 18/10/1990 - 23/11/1990; d: 28/3/1991 - 5/5/1991; e: 5/5/1991 - 8/6/1991; f: 8/6/1991 - 6/7/1991; g: 6/7/1991 - 4/8/1991; h: 4/8/1991 - 7/9/1991; i: 7/9/1991 - 5/10/1991; j: 5/10/1991 - 6/11/1991; k: 6/11/1991 - 6/6/1992.
- Site 9:** Lefka Ori Mts., 2000m: valley with very sparse vegetation, composed of *Berberis cretica*, *Prunus prostrata*, *Astragalus angustifolius* and *Satureja spinosa*. Capture dates: a: 29/7/1990 - 1/9/1990; b: 1/9/1990 - 16/10/1990; c:

8/6/1991 - 6/7/1991; d: 6/7/1991 - 4/8/1991; e: 4/8/1991 - 7/9/1991; f: 7/9/1991 - 6/10/1991; g: 6/10/1991 - 7/8/1992.

Site 10: Lefka Ori Mts., Pachnes, 2450m: sparse vegetation composed of alpine phrygana. Capture dates: a: 29/7/1990 - 1/9/1990.

Site 11 : Kallikratis, plateau above Kallikratis village, 950m : vegetation composed of alpine phrygana (*Berberis cretica*, *Genista acanthoclada*, *Sarcopoterium spinosum*, *Phlomis* sp.) and some *Quercus coccifera* and *Acer sempervirens*. a: 18/11/2000 - 6/2/2001; b: 6/2/2001 - 29/5/2001.

Site 12: Asi Gonia, 6 km SE of Kallikratis, 716m: meadow dominated by ferns and *Platanus orientalis*. Water is present the whole year. The area is surrounded by phrygana. Capture dates: a: 6/2/2001 - 29/5/2001.

Site 13: Gavdos isl., Alyki at Trypiti: salt marsh at the southernmost part of the island. Pitfalls were placed from the beach to the phrygana and maquis of the surrounding area (*Corydthymus capitatus*, *Pistacia lentiscus*, *Pinus brutia*, *Juniperus macrocarpa*). Capture dates: a: 28/7/1996 - 11/11/1996; b: 11/11/1996 - 16/3/1997; c: 16/3/1997 - 14/6/1997; d: 14/6/1997 - 28/8/1997.

Site 14: Gavdos isl., Fanari: phrygana dominated by *Corydthymus capitatus* and sparse maquis (*Pistacia lentiscus*, *Pinus brutia*, *Juniperus phoenicea*, *Juniperus macrocarpa*). Abandoned cultivated field, full of terraces. Capture dates: a: 27/7/1996 - 10/11/1996; b: 10/11/1996 - 16/3/1997; c: 16/3/1997 - 12/6/1997; d: 12/6/1997 - 29/8/1997.

Site 15: Gavdos isl., Vatsiana: phrygana dominated by *Sarcopoterium spinosum*, *Corydthymus capitatus* and sparse maquis (*Pistacia lentiscus*, *Pinus brutia*, *Juniperus phoenicea*, *Juniperus macrocarpa*). Capture dates: a: 28/7/1996 - 11/11/1996; b: 11/11/1996 - 16/3/1997; c: 16/3/1997 - 14/6/1997; d: 14/6/1997 - 24/8/1997.

Site 16: Gavdos isl., Kastri to Sarakiniko, 600m before the crossroad to Sarakiniko: pine forest with *Cistus* spp. dominating at the understory. Abandoned cultivations at the edge of a torrent. Capture dates: a: 26/7/1996 - 9/11/1996; b: 9/11/1996 - 16/3/1997; c: 16/3/1997 - 12/6/1997; d: 12/6/1997 - 29/8/1997.

Site 17: Gavdos isl., Kastri to Sarakiniko, below the water reservoir: pine forest with *Pistacia lentiscus*, *Corydthymus capitatus* and *Nerium oleander* in the understory. Capture dates: a: 26/7/1996 - 9/11/1996; b: 9/11/1996 - 16/3/1997; c: 16/3/1997 - 12/6/1997; d: 12/6/1997 - 29/8/1997.

Site 18: Gavdos isl., Kedres to Lavrakas: sand dunes dominated by *Juniperus macrocarpa*, sparse *Pistacia lentiscus*, *Corydthymus capitatus* and *Pinus brutia*. Capture dates: a: 26/7/1996 - 10/11/1996; b: 10/11/1996 - 16/3/1997; c: 16/3/1997 - 13/6/1997; d: 13/6/1997 - 26/8/1997.

Site 19: Gavdos isl., Kedres: wetland next to Ai-Giorgis church of Kedres. The water is permanently present and the dominating plant is *Nerium oleander*. Capture dates: a: 27/7/1996 - 10/11/1996; b: 10/11/1996 - 16/3/1997; c: 16/3/1997 - 13/6/1997; d: 13/6/1997 - 27/8/1997.

- Site 20:** Gavdos isl., Karaves - Korfos, 400m SW: pine forest with dense understory, composed of thorny shrubs. Capture dates: a: 16/3/1997 - 14/6/1997; b: 14/6/1997 - 29/8/1997.
- Site 21:** Gavdos isl., Metochi, between Vatsiana and Alyki: old terraces with *Pinus brutia*, *Juniperus macrocarpa*, *J. phoenicea*, *Corydorthymus capitatus*, *Sarcopoterium spinosum*. Capture dates: a: 28/7/1996 - 11/11/1996; b: 11/11/1996 - 16/3/1997; c: 16/3/1997 - 14/6/1997; d: 14/6/1997 - 27/8/1997.
- Site 22:** Gavdos isl., Sarakiniko: sand dunes dominated by *Juniperus macrocarpa* along with sparse *Pistacia lentiscus* and *Corydorthymus capitatus*. Capture dates: a: 15/3/1997 - 15/6/1997; b: 15/6/1997 - 28/8/1997.
- Site 23:** Gavdopoula isl., phrygana on the small islet NW of Gavdos. Capture dates: a: 26/7/1996 - 10/11/1996; b: 10/11/1996 - 16/3/1997; c: 16/3/1997 - 14/6/1997.

RETHYMNO

- Site 24:** Korakas bay, close to Rodakino village, 35m: maquis dominated by *Quercus coccifera*, *Calycotome vilosa* and *Ceratonia siliqua*. Capture dates: a: 8/2/2001 - 29/5/2001.
- Site 25:** Moni Preveli: degraded phrygana dominated by *Sarcopoterium spinosum*, *Corydorthymus capitatus* and *Calycotome villosa*. Capture dates: a: 25/4/1996 - 25/6/1996; b: 25/6/1996 - 26/8/1996; c: 26/8/1996 - 31/10/1996.
- Site 26:** Moni Preveli: riverbank in the Kourtaliotis gorge, dominated by *Phoenix theophrastii*, *Ceratonia siliqua* and *Pistacia lentiscus*. Capture dates: a: 25/4/1996 - 25/6/1996; b: 25/6/1996 - 26/8/1996; c: 26/8/1996 - 31/10/1996.
- Site 27:** Eksantis, Agios Kyprianos church, Irakleio - Rethymno, about 60 km W, 2 km S of the national road: dense phrygana - maquis dominated by *Quercus coccifera*, *Sarcopoterium spinosum*, *Corydorthymus capitatus* and *Calycotome villosa*. Capture dates: a: 22/4/2000 - 6/7/2000; b: 6/7/2000 - 14/9/2000; c: 14/9/2000 - 7/11/2000; d: 7/11/2000 - 13/1/2001; e: 13/1/2001 - 12/3/2001; f: 12/3/2001 - 8/5/2001.
- Site 28:** Psiloreitis Mt., Kouroutes, 650m, on the way to "Rethymnioton" Refuge: sparse phrygana. Part of the site was burned during the sampling period. Capture dates: a: 19/4/1999 - 10/6/1999; b: 10/6/1999 - 18/8/1999.
- Site 29:** Psiloreitis Mt., Kouroutes, 1000m, on the way to "Rethymnioton" Refuge: *Quercus coccifera* forest. Grazing by goats is the main disturbance. Capture dates: a: 19/4/1999 - 10/6/1999; b: 10/6/1999 - 18/8/1999.
- Site 30:** Psiloreitis Mt., ruins of ancient Zominthos, 1100m: phrygana. Capture dates: a: 2/4/1989 - 13/7/1989.
- Site 31:** Psiloreitis Mt., Lochria, 1200m: *Quercus coccifera* forest on the road to the top. Capture dates: a: 20/3/1990 - 13/1/1991.
- Site 32:** Psiloreitis Mt., Agios Mamas, Tigania plateau, 1200m: overgrazed sparse phrygana, dominated by *Phlomis* sp. Capture dates: a: 22/4/1999 - 20/7/1999; b: 20/7/1999 - 29/9/1999.

- Site 33:** Psiloreitis Mt., Idaion Antron, 1400m: subalpine phrygana. Capture dates: a: 13/7/1989 - 2/5/1990.
- Site 34:** Psiloreitis Mt., Kouroutes, 1650m, next to "Rethymnioton" Refuge: alpine phrygana. Capture dates: a: 14/4/2000 - 2/7/2000; b: 2/7/2000 - 14/9/2000; c: 14/9/2000 - 30/10/2000; d: 30/10/2000 - 24/3/2001; e: 24/3/2001 - 12/6/2001.
- Site 35:** Psiloreitis Mt., Lochria, 1700m: alpine phrygana. Capture dates: a: 15/7/1989 - 6/5/1990.
- Site 36:** Psiloreitis Mt., Lochria, 1800m, by the "mitata" (= the shepherds shelters at the mountains): alpine phrygana. Capture dates: a: 6/5/1990 - 13/1/1991.
- Site 37:** Psiloreitis Mt., Lochria, 1950m: alpine phrygana. Capture dates: a: 14/4/2000 - 2/7/2000; b: 2/7/2000 - 15/9/2000; c: 15/9/2000 - 30/10/2000; d: 30/10/2000 - 24/3/2001; e: 24/3/2001 - 12/6/2001.
- Site 38:** Psiloreitis Mt., Lochria, 2250m: sparse alpine phrygana. Capture dates: a: 15/9/2000 - 31/10/2000; b: 31/10/2000 - 13/6/2001.
- Site 39:** Vistagi - Platania, 750m, on a path next to Afentis Christos church: degraded phrygana, dominated by *Sarcopoterium spinosum* and *Phlomis* sp. Capture dates: a: 19/4/1999 - 10/6/1999; b: 10/6/1999 - 18/8/1999.
- Site 40:** Saktouria, 300m: phrygana by the riverbank. Capture dates: a: 24/2/1999 - 20/4/1999; b: 20/4/1999 - 30/6/1999; c: 30/6/1999 - 1/9/1999; d: 1/9/1999 - 4/11/1999; e: 4/11/1999 - 4/2/2000.
- Site 41:** Rizikas: phrygana dominated by *Corydorthymus capitatus* and *Phlomis* sp. Part of the site was burned during the sampling period. Capture dates: a: 20/4/1999 - 30/6/1999; b: 30/6/1999 - 1/9/1999.

IRAKLEIO

- Site 42:** Youchtas Mt., 200m after the junction to Stavros church: phrygana dominated by *Quercus coccifera*, *Genista acanthoclada*, *Corydorthymus capitatus*, *Ebenus creticus* and *Salvia fruticosa*. Capture dates: a: 16/12/1995 - 15/1/1996; b: 15/1/1996 - 18/2/1996; c: 18/2/1996 - 2/4/1996; d: 2/4/1996 - 28/4/1996; e: 28/4/1996 - 6/6/1996; f: 6/6/1996 - 2/7/1996; g: 2/7/1996 - 8/8/1996; h: 8/8/1996 - 16/9/1996; i: 16/9/1996 - 10/10/1996; j: 10/10/1996 - 14/11/1996 k: 14/11/1996 - 11/12/1996.
- Site 43:** Rouvas: *Quercus coccifera* forest. Capture dates: a: 16/4/1999 - 9/6/1999; b: 9/6/1999 - 17/8/1999; c: 17/8/1999 - 19/10/1999.
- Site 44:** Moni Vrondisiou: phrygana dominated by *Sarcopoterium spinosum*, *Calycotome villosa*, *Corydorthymus capitatus* and *Phlomis* sp. and sparse pine trees. Capture dates: a: 16/4/1999 - 9/6/1999; b: 9/6/1999 - 17/8/1999; c: 17/8/1999 - 19/10/1999.
- Site 45:** Martsalos: phrygana dominated by *Pistacia lentiscus*, *Calycotome villosa*, surrounded by maquis, mainly olive and pine trees. Capture dates: a: 20/4/1999 - 30/6/1999; b: 30/6/1999 - 1/9/1999.
- Site 46:** Pigaidakia, 400m: phrygana, dominated by *Calycotome villosa* and *Sarcopoterium spinosum*. Capture dates: a: 1/6/1999 - 30/7/1999; b: 30/7/1999 - 17/9/1999.

- Site 47:** Panagia Almyri: phrygana and alophytes at the riversides, dominated by *Calycotome villosa*, *Sarcopoterium spinosum*, *Phlomis* sp. and *Nerium oleander*. Capture dates: a: 16/3/1999 - 20/5/1999; b: 20/5/1999 - 26/7/1999; c: 26/7/1999 - 30/9/1999; d: 30/9/1999 - 26/1/2000; e: 26/1/2000 - 2/7/2000.
- Site 48:** Aposelemis river: sand dunes at the riverbank. Capture dates: a: 2/4/2000 - 2/8/2000.
- Site 49:** Achendrias, 700m: degraded phrygana in abandoned cultivations. Capture dates: a: 15/4/1999 - 8/6/1999; b: 8/6/1999 - 4/8/1999; c: 4/8/1999 - 28/9/1999.
- Site 50:** Keratokampos: phrygana - maquis close to the beach. Abandoned cultivated fields, close to the village. Capture dates: a: 27/11/1998 - 26/1/1999; b: 26/3/1999 - 26/5/1999; c: 26/5/1999 - 28/7/1999; d: 28/7/1999 - 28/9/1999; e: 28/9/1999 - 26/1/2000.
- Site 51:** Omalos Viannou, 1200m: sparse phrygana at the edge of the plateau. Capture dates: a: 26/5/1999 - 28/7/1999; b: 28/7/1999 - 28/9/1999.
- Site 52:** Dia isl., harbour: sparse phrygana (dominated by *Sarcopoterium spinosum*) near the forest rangers houses. Capture dates: a: 11/3/1999 - 2/5/1999; b: 2/5/1999 - 3/8/1999; c: 3/8/1999 - 13/4/2000.
- Site 53:** Dia isl., harbour - Ormos Panagias: phrygana at the higher water reservoir. Capture dates: a: 11/3/1999 - 2/5/1999; b: 2/5/1999 - 3/8/1999; c: 3/8/1999 - 13/4/2000.
- Site 54:** Dia isl., Ormos Panagias, SE part of the island: very close to the beach and towards the entrance of the gorge. Capture dates: a: 11/3/1999 - 2/5/1999; b: 2/5/1999 - 3/8/1999; c: 3/8/1999 - 13/4/2000.

LASITHI

- Site 55:** Milatos, 6 km E of Milatos cave, 300m: degraded phrygana. Capture dates: a: 21/4/2000 - 12/7/2000; b: 12/7/2000 - 11/10/2000; c: 11/10/2000 - 23/1/2001; d: 23/1/2001 - 9/3/2001; e: 9/3/2001 - 6/5/2001.
- Site 56:** Dikti Mt., Limnakaro plateau, 1450m, SE of "St' Anastasi" Refuge: sub-alpine phrygana. Capture dates: a: 11/5/2000 - 5/8/2000; b: 5/8/2000 - 2/10/2000; d: 9/1/2001 - 10/5/2001.
- Site 57:** Dikti Mt., Limnakaro plateau, 1750m, SE of "St' Anastasi" Refuge: alpine phrygana. Capture dates: a: 12/5/2000 - 5/8/2000; b: 5/8/2000 - 2/10/2000; c: 2/10/2000 - 9/1/2001; d: 9/1/2001 - 10/5/2001.
- Site 58:** Selakano, 800m: old terraces with sparse phrygana (burned earlier) and surrounded by *Pinus bruti*. Capture dates: a: 5/5/1999 - 23/7/1999; b: 23/7/1999 - 23/9/1999.
- Site 59:** Agios Konstantinos, 800m: dense maquis with high *Quercus coccifera*. Capture dates: a: 9/10/1989-30/1/1990; c: 25/4/1990 - 11/12/1990.
- Site 60:** Amygdaloi village, W of Neapoli, on a steep slope: dense maquis dominated by *Calycotome villosa*, *Pistacia lentiscus*, *Genista acanthoclada* and *Euphorbia dendroides*. Capture dates: a: 9/4/1997 - 6/8/1997.

- Site 61:** Agios Nikolaos, 200m: phrygana - maquis, dominated by *Quercus coccifera*. Capture dates: a: ? - 9/10/1989; b: 25/4/1990 - 20/2/1991.
- Site 62:** Prina - Messeleroi, 350m, 1.5 km E: phrygana - maquis, dominated by *Pistacia lentiscus*, *Phlomis* sp., *Calycotome villosa* and sparse *Pinus brutia*. Capture dates: a: 4/5/1999 - 23/7/1999; b: 23/7/1999 - 23/9/1999.
- Site 63:** Istro, on the national road, 2 km W: scarce maquis, dominated by *Pistacia lentiscus* and sparse olive and pine trees. Capture dates: a: 6/4/1997 - 2/6/1997; b: 2/6/1997 - 7/8/1997; c: 7/8/1997 - 10/10/1997.
- Site 64:** Bramiana lake: lake reservoir. The site is divided into a temporary pond and a steppe-like area resulting from desiccation. Capture dates: a: 30/10/1998 - 4/1/1999; b: 4/1/1999 - 3/3/1999; c: 3/3/1999 - 4/5/1999; d: 4/5/1999 - 22/7/1999; e: 22/7/1999 - 22/9/1999; f: 22/9/1999 - 1/2/2000.
- Site 65:** Ha gorge: phrygana in old terraces, with *Phlomis* sp., *Corydorthymus capitatus* and *Calycotome villosa* and sparse *Euphorbia* sp. Capture dates: a: 4/5/1999 - 22/7/1999; b: 22/7/1999 - 22/9/1999.
- Site 66:** Ierapetra, 3 km E: beach with halophytes, *Pinus brutia*, *Cetonia siliqua* and *Pistacia lentiscus*. Capture dates: a: 25/1/1990-27/6/1990.
- Site 67:** Kato Chorio, Ierapetra, 800m: pine forest. Capture dates: a: 14/3/1990-26/9/1990.
- Site 68:** Kavousi, phrygana-maquis, dominated by *Pistacia lentiscus* and *Juniperus* sp. Capture dates: a: 17/5/1999 - 22/7/1999; b: 22/7/1999 - 22/9/1999.
- Site 69:** Kavousi – Thrypti (no further details available). Capture dates: a: 26/9/1990.
- Site 70:** Mochlos, Siteia: sand dunes near the beach, dominated by *Tamarix* sp., near the riverbank. Capture dates: a: 24/1/1990 - 27/6/1990; b: 27/6/1990 - 10/3/1991.
- Site 71:** Moni Toplou - Vai, 2 km NE: phrygana. Capture dates: a: 6/4/1997-2/6/1997; b: 2/6/1997-7/8/1997; c: 7/8/1997-11/10/1997; d: 11/10/1997 - 14/12/1997; e: 14/12/1997 - 24/1/1998.
- Site 72:** Itanos, Vai: sand dunes with *Pistacia lentiscus*, *Phoenix theophrastii* and *Juncus* sp. Capture dates: a: 24/1/1990-27/6/1990; b: 27/6/1990-10/3/1991.
- Site 73:** Chamaitoulo - Xirokampos, 280m, 7.5 km SE: phrygana N of Ampelos bay. Capture dates: a: 28/5/2000-6/8/2000; b: 6/8/2000 - 12/10/2000; c: 12/10/2000 - 23/1/2001; d: 23/1/2001 - 16/3/2001; e: 16/3/2001 - 6/5/2001.

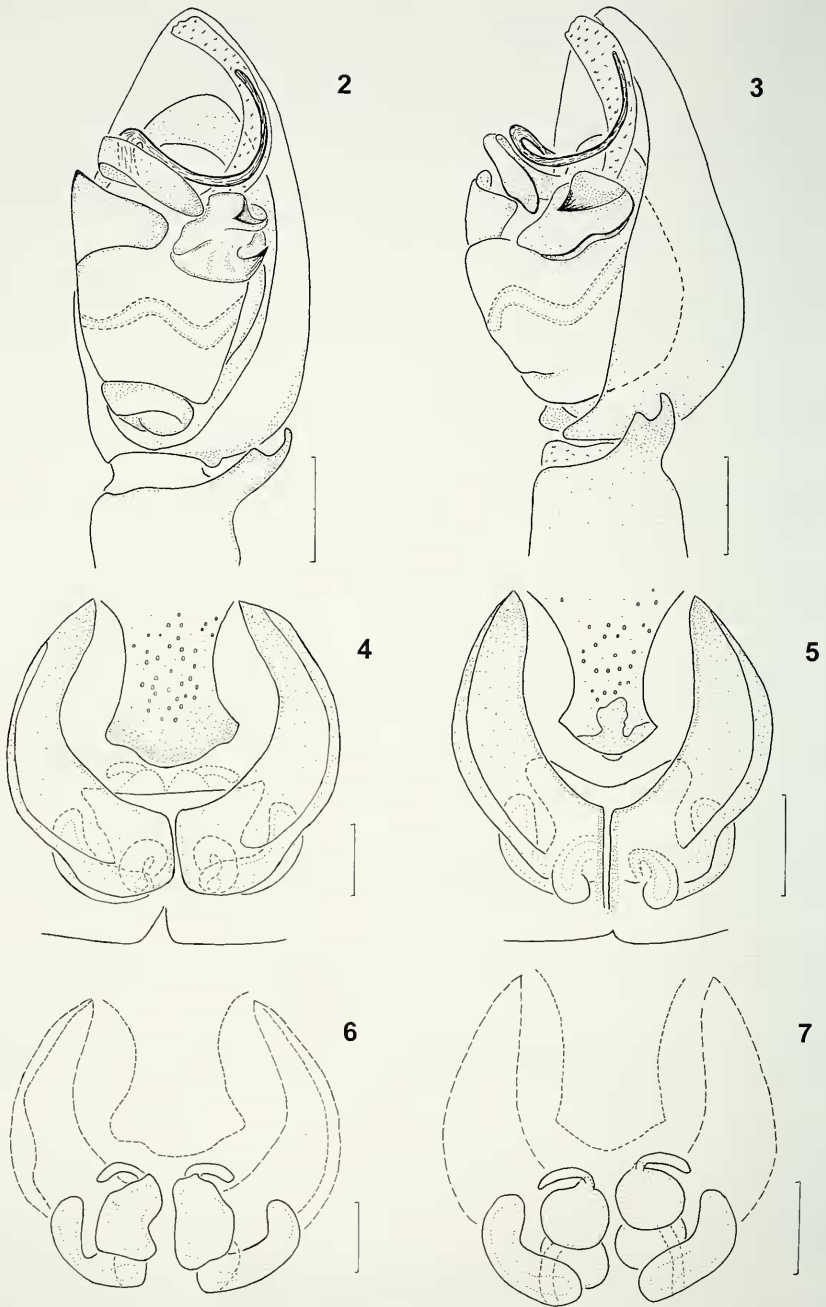
RESULTS

Anagraphis pallens Simon, 1893

Figs 2-7, 78

Identification: Levy (1999a).

Material. CRETE: CHANIA: Site 1 (b 1 ♀); Site 2 (b 1 ♂); Site 3 (b 1 ♀; c 1 ♂); Site 4 (b 1 ♂); Site 5 (a 2 ♀♀; b 2 ♂♂; c 1 ♂) (all leg. Lymberakis); Site 13 (a 1 ♂; d 2 ♂♂); Site 14 (d 2 ♂♂); Site 15 (d 1 ♂); Site 16 (c 1 ♂; d 3); Site 17 (a 1 ♂; d 1 ♂); Site 18 (a 1 ♂); Site 19 (a 2 ♂♂; d 2 ♂♂); Site 20 (a 1 ♂); Site 21 (a 1 ♂); Site 23 (c 1 ♂) (all leg. Paragamian); RETHYMNO: Site 25 (a 2 ♂♂ 2 ♀♀; b 3 ♀♀; c 1 ♂); Site 26 (b 3 ♂♂; c 1 ♂) (all leg.



FIGS 2-7

Anagraphis pallens: 2, palp of ♂, ventral view; 3, palp of ♂, retrolateral view; 4, epigyne; 5, vulva. *A. pallens* var.: 6, epigyne; 7, vulva. Scale lines 0.1mm (4-7), 0.2mm (2-3).

Lymberakis); Site 27 (a 3 ♂♂; b 2 ♂♂; c 2 ♂♂); Site 34 (a 1 ♀); Site 37 (b 4 ♂♂) (all leg. Chatzaki); Site 28 (a 1 ♀; b 2 ♂♂); Site 32 (b 1 ♂); Site 39 (b 1 ♂ 1 ♀); Site 40 (b 1 ♂ 5 ♀♀; c 4 ♂♂ 4 ♀♀ [MHNG]; d 4 ♂♂ 1 ♀); Site 41 (a 1 ♂; b 3 ♂♂) (all leg. Nikolakakis); IRAKLEIO: Site 44 (a 1 ♀; b 6 ♂♂; c 2 ♂♂); Site 47 (b 3 ♂♂ 2 ♀♀; d 2 ♂♂ 1 ♀; e 1 ♂); Site 52 (b 3 ♂♂ 1 ♀) (all leg. Nikolakakis); Site 49 (a 1 ♀; b 1 ♀; c 3 ♂♂); Site 50 (c 4 ♂♂ 3 ♀♀; d 4 ♀♀); Site 51 (b 1 ♂) (all leg. Papadimitrakis); LASITHI: Site 55 (a 3 ♂♂; b 7 ♂♂ 1 ♀); Site 73 (b 1 ♂) (all leg. Chatzaki); Site 64 (a 1 ♀; f 1 ♂ 1 ♀) (all leg. Nikolakakis); Site 58 (a 1 ♂; b 1 ♂); Site 62 (a 1 ♀ *A. pallens* variation; b 6 ♂♂); Site 64 (d 1 ♀, 1 ♀ *A. pallens* variation; e 1 ♀); Site 65 (a 1 ♂ 1 ♀; b 2 ♀♀) (all leg. Papadimitrakis); Site 63 (b 3 ♂♂); Site 71 (b 6 ♂♂; c 5 ♂♂) (all leg. Stathi); Site 59 (a 1 ♂); Site 61 (a 1 ♂); Site 70 (b 3 ♂♂ 1 ♀) (all leg. Trichas).

Taxonomy. Taxonomic characters of male and female (Figs 2-7) correspond well with the description of Levy (1999a). Variation is slight: in two females from Sites 62 and 64 the median section (*sensu* Levy, 1999a) of the epigyne is more narrow and the receptacles are rather globular (Figs 5 and 7). At Site 64 also a "normal" female was caught.

Ecology. *A. pallens* is a common species on Crete and the surrounding islands (Fig. 78). It reaches high altitudes of the Cretan mountains, having been found up to 1950m. However, its abundance declines with increasing in altitude. Adults are present from spring to autumn.

Distribution. East Mediterranean; (first record for Europe).

Poecilochroa senilis (O.P.- Cambridge, 1872)

Figs 8-11, 79

Drassus flavomaculatus L. Koch, 1878: p.40 fig. 2, 2a, Turkmenistan, Krasnowodsk (Type locality). **Syn. n.**

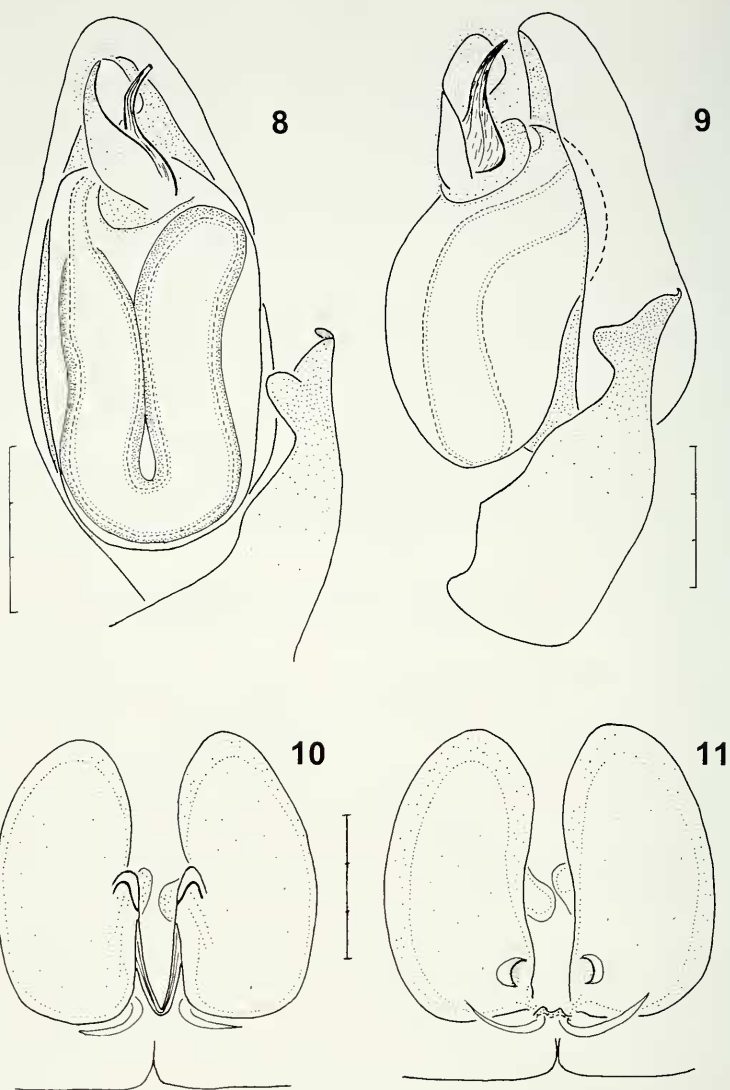
Identification: Levy (1999b).

Material. CRETE: CHANIA: Site 13 (a 1 ♀; c 8 ♂♂ 8 ♀♀; d 2 ♂♂ 15 ♀♀); Site 14 (a 3 ♀♀; d 4 ♀♀); Site 15 (d 4 ♀♀); Site 18 (d 1 ♀); Site 19 (a 1 ♀; c 1 ♂; d 1 ♀); Site 23 (c 2 ♂♂) (all leg. Paragamian); RETHYMNO: Site 28 (a 1 ♂) (leg. Nikolakakis); IRAKLEIO: Site 52 (b 1 ♀) (leg. Nikolakakis); LASITHI: Site 70 (b 1 ♀) (leg. Trichas); Site 71 (b 1 ♂ 2 ♀♀ [MHNG]) (all leg. Stathi).

Taxonomy. Taxonomic characters (Figs 8-11) apparently correspond with the description of Levy (1999b). Males are characterized by the bifid tibial apophysis, the membranous conductor and the bulging spermophore. The same characters of the male palpal organ are detected in *Drassodes flavomaculatus* (L. Koch, 1878) (see Fig. 2, 2a), therefore a new synonymy is proposed. In all females examined, copulatory orifices are located at midlevel of the spermathecae (Fig. 10).

Ecology. This is an uncommon species on Crete (Fig. 79). Apart from Kouroutes at the base of Mt. Psiloreitis (Site 28), all the other localities where *P. senilis* was found are close to beaches, which is indicative of a recent colonization. However, the species is quite widespread on Gavdos. Adults are present from spring to late summer, with a peak of activity in early summer.

Distribution. East Mediterranean, Corsica, Turkmenistan; (first record for Greece).



FIGS 8-11

Poecilochroa senilis: 8, palp of ♂, ventral view; 9, palp of ♂, retrolateral view; 10, epigyne; 11, vulva. Scale lines 0.3mm.

Berinda amabilis Roewer, 1928

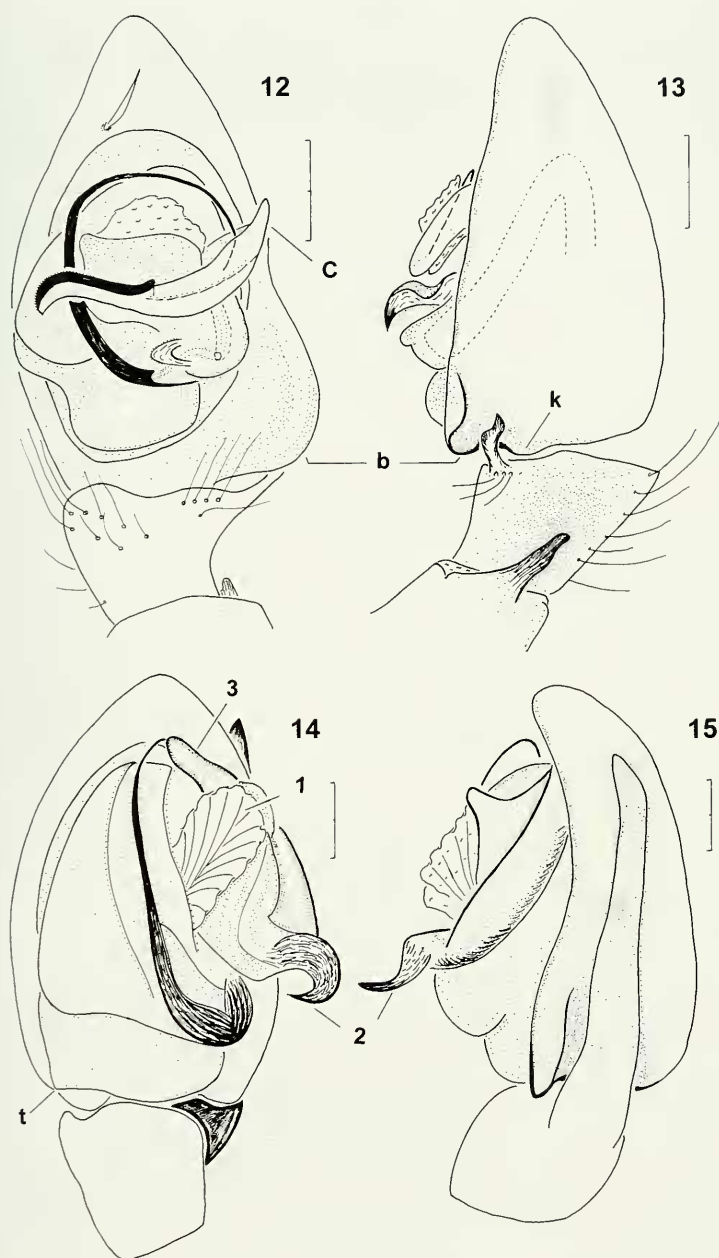
Figs 12-13, 16-17, 80

Berinda amabilis Roewer, 1928 (p. 106, Figs 11-13), CRETE: Chania: Akrotiri, Governeto monastery (type locality).

Talanites aculeatus Charitonov, 1946: p. 26, fig. 43, Uzbekistan, Yakkabagh (Type locality).

Syn. n.

Identification: Roewer (1928, descr. of ♂).



FIGS 12-15

Berinda amabilis: 12, 13. *Berinda ensigera*: 14, 15. Palp of ♂, ventral view (12, 14), palp of ♂, retrolateral view (13, 15). Scale lines 0.2mm.

Material. Comparative material examined: *B. a.*: 1 ♂ holotype, SMF: CR 595/45.

CRETE: CHANIA: Site 1 (a 1 ♂); Site 3 (a 8 ♂ 1 ♀; c 1 ♀); Site 5 (a 1 ♂; b 2 ♀ ♀); Site 6 (e 1 ♂ 2 ♀ ♀; f 4 ♀ ♀) (all leg. Lymberakis); Site 15 (a 2 ♀ ♀; c 1 ♂; d 3 ♀ ♀); Site 17 (d 1 ♂ 1 ♀) (all leg. Paragamian); RETHYMNO: Site 24 (a 1 ♂ 1 ♀) (leg. Stathi); Site 25 (a 2 ♀ ♀); Site 26 (a 1 ♂ 1 ♀; b 3 ♀ ♀) (all leg. Lymberakis); Site 41 (a 1 ♂) (leg. Nikolakakis); IRAKLEIO: Site 50 (b 2 ♂ 3 ♀ ♀, [MHNG]; c 3 ♂ 6 ♀ ♀) (all leg. Papadimitrakis); LASITHI: Site 63 (b 1 ♂) (leg. Stathi); Site 68 (a 1 ♂ 1 ♀) (leg. Papadimitrakis); Site 70 (a 1 ♂; b 3 ♂ ♂) (all leg. Trichas); Site 73 (a 1 ♂ 1 ♀) (leg. Chatzaki).

Taxonomy. *Berinda amabilis* was first described by Roewer (1928) and has not been recorded again until now. The species stood as a Cretan endemic. However, based on the similarity of the tibial apophysis and the embolus of the palpal organ of *Talanites aculeatus* Charitonov, 1946 (Fig. 43), we are inclined to propose this species as a new synonym of *B. amabilis*. Therefore the biogeographical characterisation of *B. amabilis* as a Cretan endemic is no longer valid. *Berinda ensigera* is here proposed as a congener.

Measurements ♂ (♀), n = 7 (5): TL: 5.3-6.9 (5.7-8.5), PL: 2.6-3.2 (2.7-3.4), PW: 2-2.2 (1.9-2.5), OL: 2.5-3.4 (2.8-4.9), PL/PW: 1.28-1.5 (1.36-1.45), AME: 0.07-0.1 (0.07-0.11), ALE: 0.07-0.15 (0.08-0.15), PME: 0.1-0.12 (0.1-0.15), PLE: 0.07-0.11 (0.1-0.15), AME-AME: 0.02-0.07 (0.07-0.1), AME-ALE: 0.02-0.04 (0.02-0.03), PME-PME: 0.04-0.07 (0.05-0.08), PME-PL: 0.07-0.12 (0.1).

♂ ♀: Yellow to red-brown spiders of medium size. Prosoma oval, with small, black hairs, narrow at cephalic part and widening at thoracic part. Sternum oval. Maxillae as in *Zelotes*. Labium longer than wide. Chelicerae with 2 anterior and 3 posterior teeth and with lateral condyles. Anterior row of eyes slightly recurved, posterior row slightly procurved or straight. PME circular to oval. Opisthosoma yellow-grey. Males with an orange scutum covered with strong bristles. Anterior spinnerets long and cylindrical, posterior ones much smaller.

Legs: Ta and Me I-II with scopula. Ta III-IV with dense stripe of small spines. Me III-IV with apical preening comb as in *Zelotes*. Spination: Fe: I-II d 2; III-IV d 5-7. Pa: I-II, IV -; III p 1, r 1. Ti: I-II ♂ v 3-4; ♀ -; III-IV spinose. Me: ♂ I-II v 3-4; ♀ I -, II 3-4; III-IV spinose.

♂ Pedipalp (Figs 12-13): Fe with 3 spines, Pa with fingerlike retrolateral apophysis, Ti with retrolateral side hairless, slightly excavated, retrolateral apophysis slender. Cymbium oval, with proximal extension divided into a ventral bulge (b) and a lateral knob (k). Tegulum sclerotized, ventrally membranous, with a distinct conductor (C); embolus filiform, rising from proximal part of tegulum. Conductor basally membranous, ending as a S-shaped sclerotized band.

Epigyne (Fig. 16): Anteriorolateral margins widely curved to the sides, at midline elevated to a small conical hood. Introductory orifices situated laterally.

Vulva (Fig. 17): Fertilisation ducts short, with small glandular heads, leading to globular spermathecae.

Ecology. *B. amabilis* is a rather rare species, occurring across the island (Fig. 80). Apparently it prefers phryganic habitats situated near the coast. Only once it has been collected on mainland Crete, on Lefka Ori, at 800m altitude. Adults occur from early spring to autumn, with a male peak of activity in spring.

Distribution. Crete, Gavdos, Uzbekistan.

Berinda ensigera (Cambridge, 1874) comb. n.

Figs 14-15, 18-19, 80

Drassodes ensigera (Cambridge, 1874), p. 389, Fig. 14, SMYRNE (type locality).

Drassodes reimoseri Bristowe, 1935 (p. 779, Figs 4-6), RODOS (type locality). **Syn. n.** - Hadjissarantos (1940), ATTIKI: Parnitha, Agia Triada; Rafina; Nea Philadelphia; Salamina, Selinia; Podoniftis; Pikermi; Pendeli-Monastiri; Hymittos-Kareas; Toyrkolimano; Psychiko.

Identification: Cambridge (1874, p. 389, Fig.14), Bristowe (1935, p. 779, Figs 4-6), Hadjissarantos (1940, p. 77, Fig.22).

Material. CRETE: CHANIA: Site 4 (a 2 ♂♂; b 1 ♀; c 2 ♀♀); Site 5 (b 2 ♂♂) (all leg. Lymberakis); LASITHI: Site 64 (d 4 ♂♂); Site 65 (a 2 ♂♂ 1 ♀ [MHNG]) (all leg. Papadimitrakis); Site 66 (a 3 ♂♂ 4 ♀♀) (leg. Trichas). Material from further localities (vidit M. Chatzaki, 2000, all in collection Hadjissarantos, ZMUA): CRETE: Moralion (?); PELOPONNISOS: Isthmia; POROS: Galatas; SAMOS: Koumaradaios.

Taxonomy. Cambridge (1874) described *Drassodes ensigera* from male and female specimens, collected in Smyrne. On the other hand, Bristowe described in 1935 the female of *D. reimoseri* and later Hadjissarantos (1940) found the corresponding male. Characters of both sexes of these two species provide strong evidence that none of them belongs to *Drassodes*, and that they are in fact the same, as will be discussed later. Therefore, a new synonym and a new combination are proposed here.

Measurements ♂ (♀), n = 6 (4): TL: 6.2-7 (6.4-9), PL: 2.7-3.1 (3-3.4), PW: 2.2-2.5 (2.2-2.5), OL: 3.1-3.4 (3.2-5.7), PL/PW: 1.22-1.29 (1.36-1.45).

♂ ♀: Red-brown spiders. Maxillae as in *Zelotes*. Labium longer than wide. Chelicerae with 2 anterior and 4 posterior teeth and with lateral condyles. Eyes round except for oblique PME. Anterior row of eyes recurved, posterior one procurved. Opisthosoma light brown, in ♂ with scutum, covered with a thick fringe of bristles. Spinnerets long and cylindrical, anterior ones longer than posteriors.

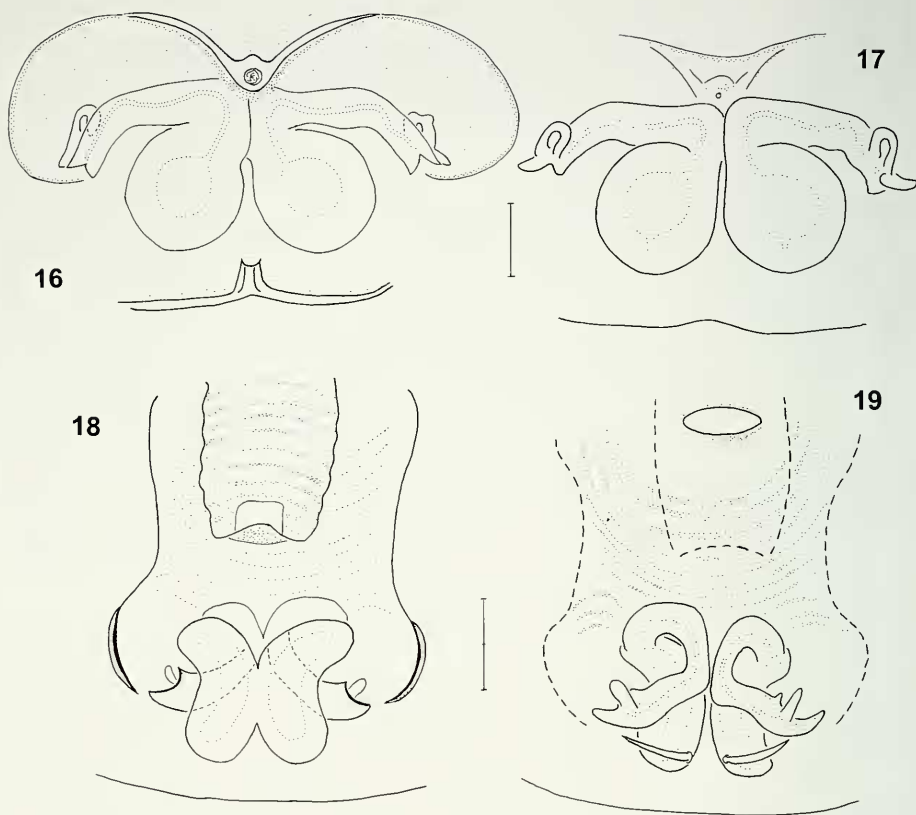
Legs: Ta and Me I-II with scopula, Me III-IV with apical preening comb, as in *Zelotes*. Spination: Fe: I d 3; ♂ II d 3-4; ♀ II d 3; III-IV d 6-7. Pa: I-II, IV -; III p 1 r 1. Ti: I -; II v 3-4; III-IV spinose. Me: ♂ I v 2; ♀ I v 1; II v 4; III-IV spinose.

♂ Pedipalp (Figs 14-15): Fe with 3 spines, Pa short, without apophysis. Tibial apophysis straight and very long, almost as long as the cymbium, closely attached to the lateral margin of the cymbium, as in *B. amabilis*. Cymbium oval with retrolateral furrow, its retrolateral proximal angle slightly extended. Subtegulum with a triangular projection at its base (t). Tegulum robust, ventrally membranous, with distinct conductor. Embolus long and filiform, rising from proximal base of tegulum. Conductor strongly developed, with three elements: a membranous anterior sac (1), a sclerotized posterior hook (2) and a sickle-shaped guiding structure (3).

Epigyne (Fig. 18): with an anterior hood as in *Gnaphosa*. Lateral margins parallel and widening posteriorly, leading to the copulatory orifices.

Vulva (Fig. 19): Introductory ducts with glandular heads, forming one coil leading to the oval spermathecae.

Comments. "*Drassodes*" *ensigera* shows a puzzling combination of characters. The epigyne has a hood, like in many *Gnaphosa* species, but there is no keel on the chelicerae. It therefore, cannot belong to the Gnaphosinae. The genital characters of both sexes do not fit those of the genus *Drassodes* at all. There are preening combs on Me III & IV, as in *Zelotes* and allied species. Distinct features of the male are:



FIGS 16-19

Berinda amabilis: 16, 17. *Berinda ensigera*: 18, 19. Epigyne (16, 18), vulva (17, 19). Scale lines 0.1mm (16-17), 0.2mm (18-19).

tibial apophysis and conductor. It is apparent that this species does not belong to *Drassodes*. In our opinion, it also cannot be assigned to any other well-established genus. As it shows a conductor like *Berinda*, we tentatively place it into this genus. A conductor is uncommon in Gnaphosidae, but also present in *Callilepis* (Platnick, 1975). The description and figures of Cambridge (1874) concerning *Drassodes ensigera*, belong to the same species without any doubt (see tibial apophysis, conductor, and *Gnaphosa*-like shape of epigyne, Fig. 14), therefore the older name must be kept as valid.

Ecology. This species shows a preference for humid places, such as lakes and water reservoirs or even gorges (Fig. 80). Adult males are present during spring and summer, while females have a longer period of maturity.

Distribution. GREECE: Attiki; Peloponnisos; Isls.: Crete; Rodos; Samos; Poros; Turkey.

Callilepis cretica (Roewer, 1928)

Figs 20-23, 80

Minosia cretica Roewer, 1928, CRETE: Chania: Akrotiri, under a stone outside Arkalo cave (type locality); Omalos; Rethymno: Topolia; Irakleio: Knossos.

Callilepis wiehlei Bristowe, 1935, RODOS (type locality) (Wunderlich, 1977), not *Callilepis concolor* Simon, 1914 contra Platnick (1975: 17, Figs 36-38).

Crosbyellum creticum: Roewer (1954: 359).

Identification: Roewer (1928, p. 113, Figs 23-25), Bristowe (1935, p. 780, Figs 7-12), Wunderlich (1977, p. 292).

Material. Comparative material examined: *M. cretica*: CRETE Akrotiri (1 ♂ holotype, 2 ♀ Paratypes, SMF: CR 592/42-43); Knossos (1 ♀, SMF: CR 613/63).

CRETE: CHANIA: Site 3 (a 5 ♂♂; c 1 ♀; f 1 ♂); Site 7 (e 1 ♂; f 2 ♂♂ 1 ♀; g 1 ♀); Site 8 (a 35 ♀♀; b 2 ♀♀; f 1 ♂; g 31 ♂♂ 11 ♀♀; h 1 ♂ 15 ♀♀; i 8 ♀♀; j 1 ♀) (all leg. Lymberakis); RETHYMNO: Site 25 (a 3 ♂♂ 2 ♀♀; c 1 ♂); Site 26 (b 2 ♀♀) (all leg. Lymberakis); Site 33 (a 7 ♂♂ 1 ♀) (leg. Trichas); Site 27 (a 8 ♂♂ 1 ♀; b 2 ♂♂); Site 34 (a 2 ♂♂; b 51 ♂♂ 43 ♀♀; c 1 ♀); Site 37 (b 1 ♂ 1 ♀; c 1 ♂) (all leg. Chatzaki); Site 28 (a 6 ♂♂ 2 ♀♀; b 2 ♀♀); Site 29 (b 1 ♀); Site 32 (a 5 ♂♂ 4 ♀♀; b 3 ♀♀); Site 39 (a 6 ♂♂; b 11 ♂♂ 10 ♀♀); Site 40 (b 1 ♂ 2 ♀♀; c 2 ♀♀; d 2 ♂♂ 1 ♀); Site 41 (b 2 ♂♂) (all leg. Nikolakakis); IRAKLEIO: Site 43 (a 10 ♂♂ 5 ♀♀; b 1 ♀); Site 44 (b 1 ♂) (all leg. Nikolakakis); Site 49 (b 1 ♂ 4 ♀♀; c 3 ♀♀); Site 51 (a 7 ♂♂ 2 ♀♀ [MHNG]) (all leg. Papadimitrakis); LASITHI: Site 56 (a 37 ♂♂ 1 ♀; b 1 ♀) (all leg. Chatzaki); Site 58 (a 15 ♂♂ 6 ♀♀; b 1 ♂ 4 ♀♀); Site 64 (d 2 ♂♂; e 1 ♂) (all leg. Papadimitrakis); Site 63 (b 2 ♂♂ 1 ♀; c 1 ♂) (all leg. Stathi); Site 59 (a 2 ♂♂; c 9 ♂♂ 3 ♀♀); Site 66 (a 1 ♂ 2 ♀♀); Site 69 (a 1 ♂ 1 ♀) (all leg. Trichas).

Taxonomy. According to Platnick (1975), *Callilepis wiehlei* is a synonym of *Callilepis concolor* from SW Europe. However, Wunderlich (1977) synonymized *C. wiehlei* with *Minosia cretica*, and placed this species in *Callilepis*. The specimens recently collected in Crete (Figs 20-23) fully confirm the interpretation of Wunderlich. They differ from *C. concolor* in the median sclerotization of the epigyne and in details of vulva and conductor. In *C. cretica* the coil of the introductory duct is separated from the spermathecae by a distinct angle (Fig. 22), while in *C. concolor* both parts are connected in a straight line [for *C. concolor*, see Platnick (1975), Machado (1941)].

Ecology. *C. cretica* is well adapted on the Cretan mainland and reaches altitudes of about 2000m (Fig. 80). Although present in the lowlands, it seems to prefer comparatively moist and shady habitats and is therefore more abundant at moderate altitudes (about 1600m) and in woodlands. In the lowlands the peak of activity is in the spring and early summer months, while at higher altitudes the peak shifts towards late summer and autumn.

Distribution. GREECE: Attiki: Vouliagmeni; Ekali (Hadjissarantos, 1940: 74, sub *Minosia cretica*); Crete: Lasithi: Ierapetra (Wunderlich, 1977: 292); Rodos.

Micaria pygmaea Kroneberg, 1875

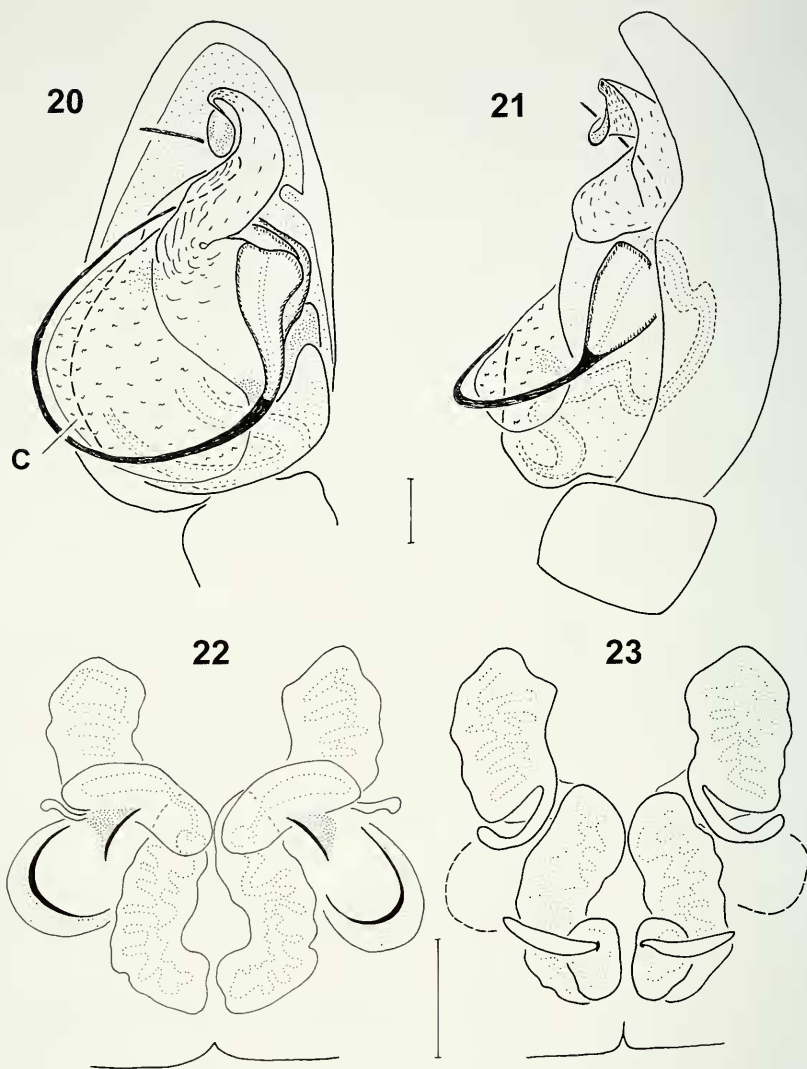
Figs 28-29, 35-36, 81

Micaria harmsi Wunderlich, 1979, SPAIN; Bosmans & Blick (2000).

Identification: Wunderlich (1979, p. 283, Figs 32 a-d), Bosmans & Blick (2000, p. 447, Figs 5-8).

Material. CRETE: CHANIA: Site 13 (a 3 ♂♂ 2 ♀♀; d 2 ♂♂ 1 ♀; d 1 ♂ 1 ♀ [MHNG]) (all leg. Paragamian); LASITHI: Site 64 (c 1 ♂) (leg. Nikolakakis).

Taxonomy. This is a poorly known species, which was only recently recorded from Crete and was synonymized with *M. harmsi* by Bosmans & Blick (2000).



FIGS 20-23

Callilepis cretica: 20, palp of ♂, ventral view; 21, palp of ♂, retrolateral view; 22, epigyne; 23, vulva. Scale lines 0.1mm.

Measurements ♀ (♂), n = 5 (4): TL: 2.2-5 (-2-2.1), PL: 0.9-2.2 (0.8-1), PW: 0.6-2.2 (0.5-0.6), OL: 1.1-2.8 (0.9-1), PL/PW: 0.86-1.83 (1.6-1.8), TaI: 0.3-0.4 (0.4), MeI: 0.3-0.4 (0.3), TiI: 0.4-0.5 (0.35).

♂ Pedipalp (Figs 28-29): Tibia shorter than cymbium. Tibial apophysis absent, embolus straight and prominent.

Epigyne (Fig. 35): Lateral margins curved, forming triangular pouches and closing posteriorly as a w-shaped ridge. Anterior margin absent, in contrast to the other *Micaria* species.

Vulva (Fig. 36): Introductory ducts small, with a glandular head at their base.

Ecology. This species is the only *Micaria* found on Gavdos (Fig. 81). It is noteworthy that both on Gavdos, as well as on Crete, it is scarce and found only in sandy localities, close to water (see also Bosmans & Blick 2000). This makes us suspect that an anthropogenic way of dispersal to the islands has occurred, probably by ships.

Distribution. Circum-mediterranean. GREECE: Crete: Lasithi: Myrtos (Bosmans & Blick, 2000: 447).

***Micaria coarctata* (Lucas, 1846)**

Figs 24-25, 31-32, 81

Micaria praesignis L. Koch, 1867: Hadjissarantos (1940: 99), SYROS; ATTIKI: Parnis-Mola; Parnis-Palaiochori; Kato Souli; Podoniftis; Bosmans & Blick (2000).

Micaria albimana O.P. Cambridge, 1872: Wunderlich (1979), CRETE: Chania: Xyloskalo; Bosmans & Blick (2000).

Identification: Wunderlich (1979, p. 264, Figs 22 a-f, 44 a-e), Bosmans & Blick (2000, p. 452, Figs 17-20).

Material. CRETE: CHANIA: Site 2 (a 1 ♂; b 1 ♀); Site 3 (b 3 ♂♂; c 1 ♂); Site 5 (a 3 ♂♂; b 4 ♀♀); Site 8 (g 1 ♀) (all leg. Lymberakis); RETHYMNO: Site 25 (a 5 ♂♂ 1 ♀; b 1 ♀); Site 26 (b 1 ♂ 4 ♀♀) (all leg. Lymberakis); Site 27 (a 1 ♂); (leg. Chatzaki); Site 33 (a 1 ♂ 1 ♀) (leg. Trichas); Site 28 (b 2 ♂♂ 3 ♀♀); Site 40 (b 1 ♂); Site 41 (a 2 ♂♂) (all leg. Nikolakakis); IRAKLEIO: Site 42 (f 1 ♀; g 1 ♂ 3 ♀♀) (all leg. Chatzaki); Site 43 (b 3 ♂♂); Site 44 (b 1 ♀); Site 45 (a 2 ♂♂ 1 ♀ [MHNG]); Site 47 (b 7 ♂♂ 9 ♀♀; e 3 ♂♂); Site 50 (b 2 ♂♂); Site 52 (b 1 ♂); Site 54 (b 4 ♂♂ 1 ♀) (all leg. Nikolakakis); Site 46 (a 9 ♂♂ 4 ♀♀); Site 49 (b 1 ♂); Site 51 (a 1 ♀) (all leg. Papadimitrakis); LASITHI: Site 55 (a 1 ♀; b 1 ♀); Site 57 (a 2 ♀♀) (all leg. Chatzaki); Site 58 (a 2 ♂♂); Site 62 (b ♂ 1 ♀); Site 64 (d 1 ♂); Site 65 (a 1 ♀; b ♂ 1 ♀) (all leg. Papadimitrakis); Site 63 (b 1 ♀); Site 71 (b 1 ♂ 1 ♀) (all leg. Stathi); Site 59 (a 3 ♀♀); Site 66 (a 1 ♂); Site 67 (a 1 ♂ 1 ♀); Site 70 (b 1 ♀); Site 72(a 1 ♀) (all leg. Trichas).

Taxonomy. Males are easily distinguished by the two apophyses at the tibia of the pedipalp (Figs 24-25). The epigyne of the females is broader than in other *Micaria* species and its anterior margin is very close to the spermathecae (Figs 31-32). They are medium sized spiders.

Ecology. This is the commonest species of the genus *Micaria* found on Crete (Fig. 81). It has a wide habitat preference, reaching an altitudinal limit of 1750m on Crete and 2260m in Morocco (Bosmans & Blick, 2000). Adults are present from spring to mid autumn, as it is the case in all *Micaria* presented in this paper.

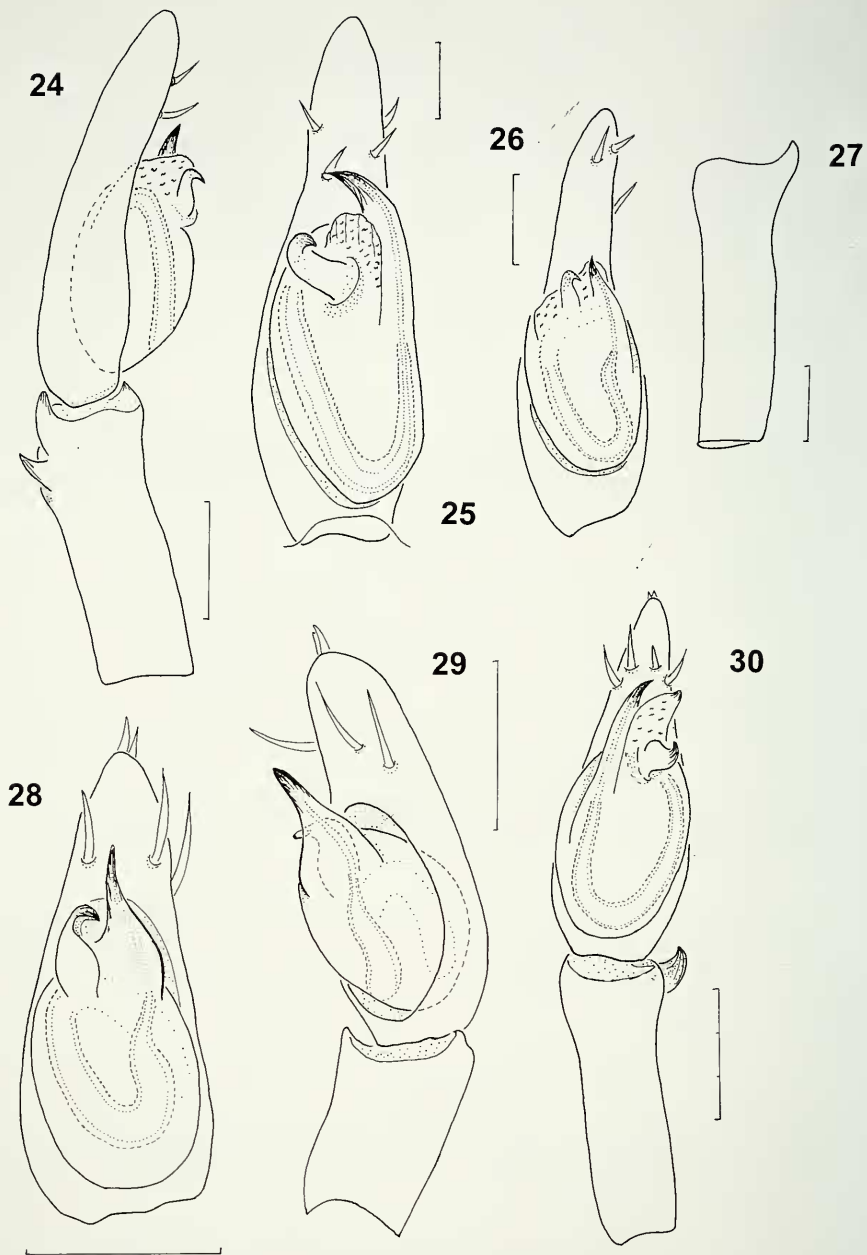
Distribution. Europe to Central Asia. GREECE: Crete: Irakleio: Lendas (Bosmans & Blick, 2000: 452).

***Micaria dives* (Lucas, 1846)**

Figs 26-27, 33-34, 81

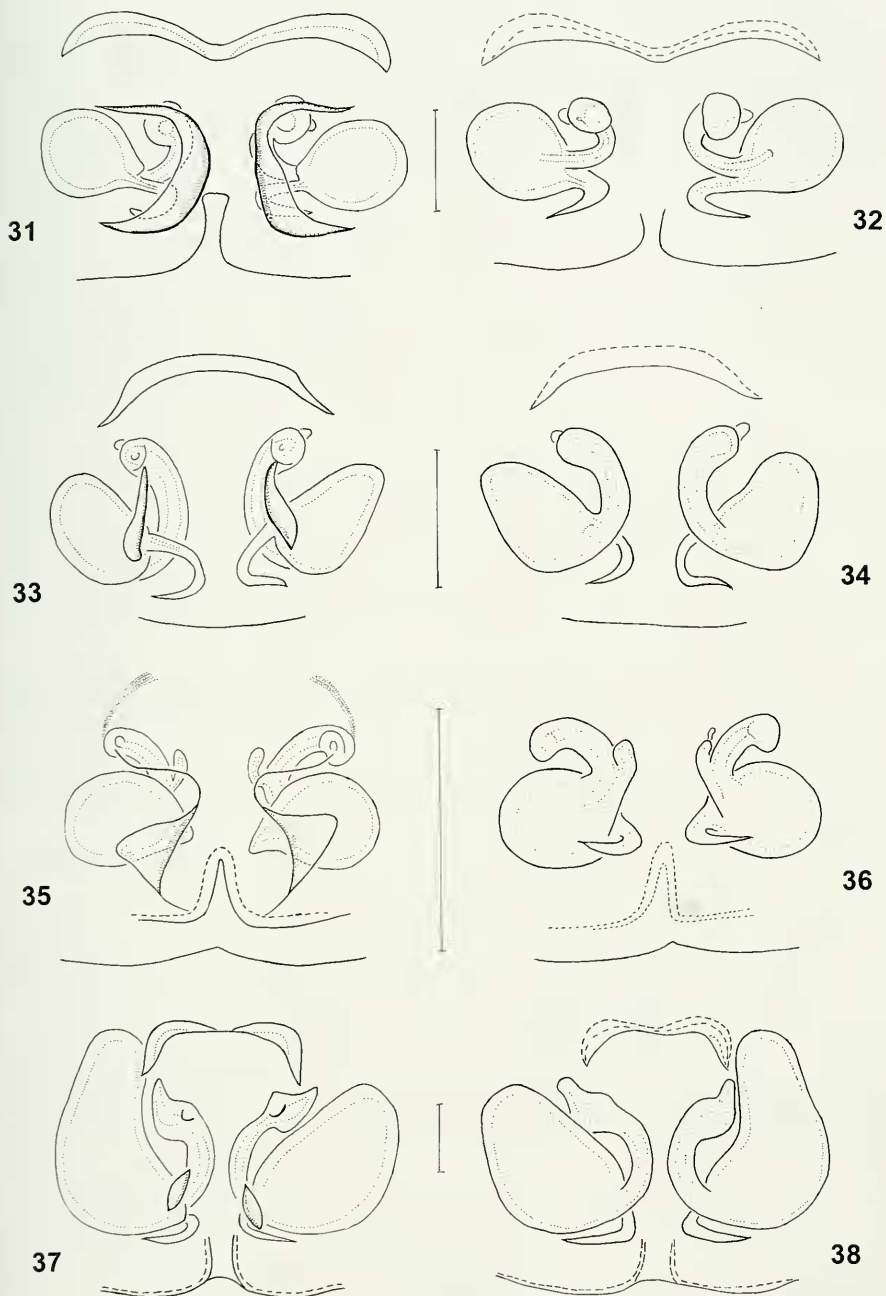
Identification: Wunderlich (1979, p. 287, Figs 34 a-d, 58 a-c), Bosmans & Blick (2000, p. 446, Figs 1-4).

Material. CRETE: RETHYMNO: Site 39 (a 2 ♂♂) (leg. Nikolakakis); IRAKLEIO: Site 43 (b 1 ♂); Site 44 (a 2 ♂♂) (all leg. Nikolakakis); Site 49 (a 1 ♂) (leg. Papadimitrakis); LASITHI: Site 56 (a 6 ♂♂ 1 ♀; b 2 ♀♀) (all leg. Chatzaki).



FIGS 24-30

Micaria coarctata: 24, palp of ♂, retrolateral view; 25, palp of ♂, ventral view. *M. dives*: 26, palp of ♂, ventral view; 27, pedipalp of ♂, tibia. *M. pygmaea*: 28, palp of ♂, ventral view; 29, palp of ♂, retrolateral view. *M. albovittata*: 30, palp of ♂, ventral view. Scale lines 0.1mm (24-29), 0.3mm (30).



FIGS 31-38

Micaria coarctata: 31, 32. *M. dives*: 33, 34. *M. pygmaea*: 35, 36. *M. albiovittata*: 37, 38. Epigyne (31, 33, 35, 37), vulva (32, 34, 36, 38). Scale lines 0.1mm.

Ecology. *M. dives* is the second small-sized *Micaria* on Crete. It is rather uncommon, being found at middle altitudes of Psiloreitis Mt. and Dikti Mt., but only at one locality in the lowlands (Fig. 81).

Distribution. Palearctic. GREECE: Peloponnisos: Arkadia: Leonidio, Palaiochori (Bosmans & Blick, 2000: 446); Crete: Wunderlich (1979: 287).

***Micaria albovittata* (Lucas, 1846)**

Figs 30, 37-38, 81

Micaria romana L. Koch, 1866: Wunderlich (1979); Bosmans & Blick (2000).

Identification: Wunderlich (1979, p. 260, Figs 9 a-c, 42 a-f), Bosmans & Blick (2000, p. 451, Figs 13-16).

Material. CRETE: RETHYMNO: Site 25 (a 1 ♂) (leg. Lymberakis); Site 32 (a 1 ♂); Site 39 (a 2 ♀♀); Site 40 (b 2 ♂♂ 1 ♀) (all leg. Nikolakakis); IRAKLEIO: Site 47 (a 1 ♂ 1 ♀ [MHNG]; e 1 ♂) (all leg. Nikolakakis); LASITHI: Site 59 (c 1 ♂) (leg. Trichas).

Taxonomy. *M. albovittata* is the largest *Micaria* on Crete. Males are characterized by a robust tibial apophysis of the pedipalp and by their relatively long palpal tibia, compared to the cymbium (Fig. 30). Females are distinguished by the thick and narrow anterior epigynal margin (Fig. 37) and the large spermathecae (Fig. 38). The distinctive character given by Bosmans & Blick (2000), i.e. the position of the spermathecae in relation to the anterior margin, does not seem to be constant; see drawings of Bosmans & Blick (2000, Figs 15-16), Wunderlich (1979, Figs 42 c-f) and of us (Figs 37-38).

Ecology. This is another uncommon species on Crete (Fig. 81). It occurs along with *M. coarctata* as well as with *M. dives*, but has a more restricted distribution on the island.

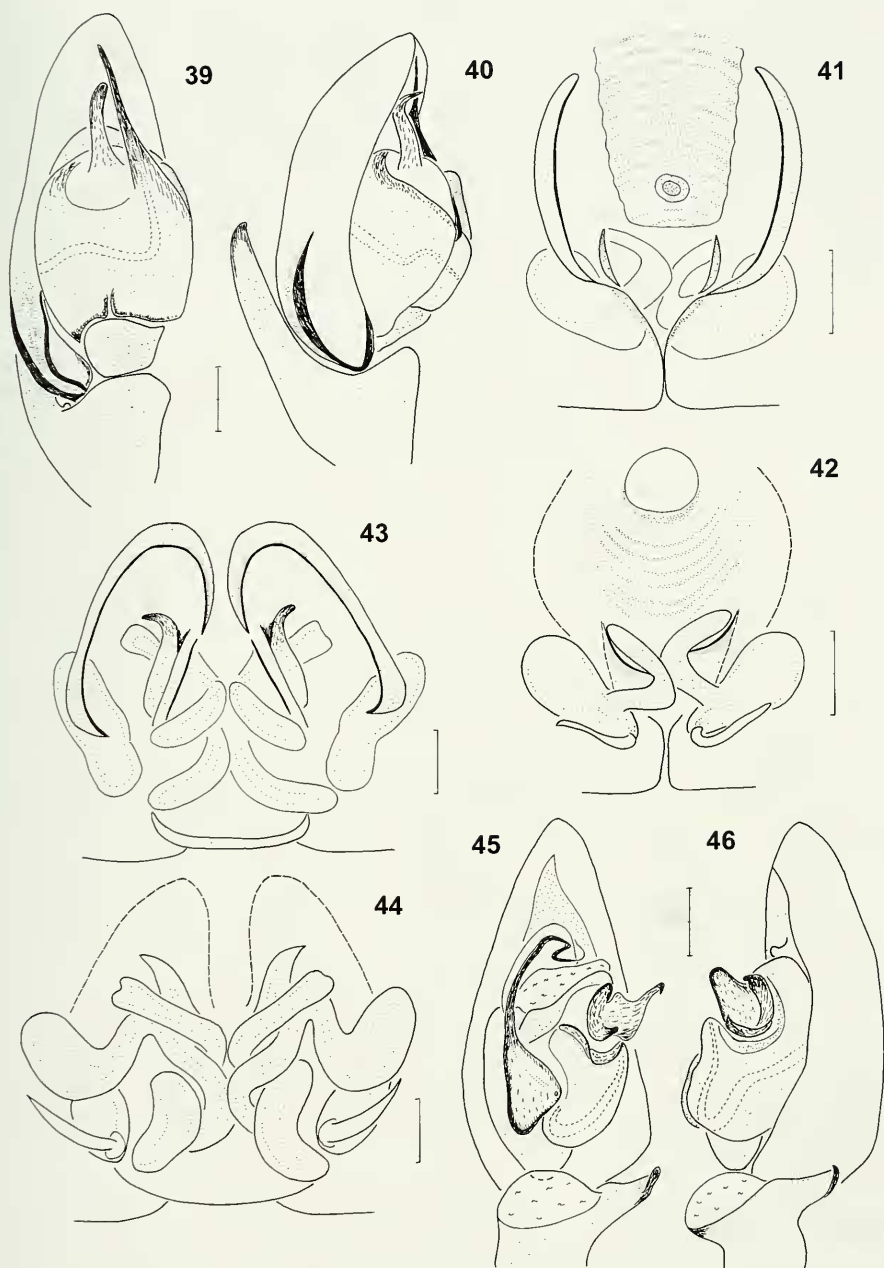
Distribution. Palearctic. GREECE: Peloponnisos: Argolida: Oros Didymo; Arkadia: Magalopolis, Thersileion (Bosmans & Blick, 2000: 451).

***Pterotricha lentiginosa* (C. L. Koch, 1837)**

Figs 43-46, 82

Identification: Levy (1995), Dalmás (1921).

Material. CRETE: CHANIA: Site 1 (a 24 ♂♂ 21 ♀♀; b 6 ♀♀; c 3 ♂♂ 1 ♀); Site 2 (a 33 ♂♂ 39 ♀♀; b 6 ♀♀; c 10 ♂♂ 1 ♀; d 1 ♂; f 20 ♂♂ 1 ♀); Site 3 (a 8 ♂♂ 7 ♀♀; c 5 ♂♂; d 2 ♂♂ 1 ♀; e 1 ♂ 1 ♀; f 12 ♂♂ 2 ♀♀); Site 4 (a 1 ♀; b 1 ♀); Site 5 (a 1 ♂ 1 ♀); Site 6 (a 1 ♂; e 1 ♀; h 1 ♂); Site 7 (b 1 ♀; d 1 ♂ 5 ♀♀; e 13 ♀♀; f 1 ♂ 3 ♀♀; g 59 ♂♂ 3 ♀♀; h 32 ♂♂ 5 ♀♀; i 1 ♂ 1 ♀; j 1 ♂); Site 8 (a 50 ♂♂ 5 ♀♀; b 24 ♂♂ 9 ♀♀; c 1 ♀; d 4 ♀♀; e 6 ♀♀; g 18 ♀♀; h 18 ♂♂ 2 ♀♀; i 21 ♂♂ 3 ♀♀; j 7 ♂♂ 2 ♀♀; k 2 ♀♀) (all leg. Lymberakis); Site 11 (b 9 ♂♂ 1 ♀) (leg. Stathi); RETHYMNO: Site 24 (a 2 ♂♂) (leg. Stathi); Site 25 (a 9 ♂♂ 26 ♀♀; c 1 ♂) (all leg. Lymberakis); Site 30 (a 2 ♀♀); Site 33 (a 5 ♂♂ 1 ♀); Site 35 (a 6 ♂♂ 6 ♀♀); Site 36 (a 4 ♀♀) (all leg. Trichas); Site 27 (a 51 ♂♂ 77 ♀♀; b 5 ♂♂ 11 ♀♀; c 25 ♂♂ 1 ♀; d 2 ♂♂ 1 ♀; e 4 ♂♂ 1 ♀; f 18 ♂♂ 2 ♀♀); Site 34 (a 3 ♂♂ 44 ♀♀; b 69 ♂♂ 24 ♀♀; c 14 ♂♂ 3 ♀♀; d 1 ♂ 4 ♀♀; e 11 ♀♀); Site 37 (a 12 ♀♀; b 54 ♂♂ 20 ♀♀; c 24 ♂♂ 10 ♀♀; e 4 ♀♀) (all leg. Chatzaki); Site 28 (a 8 ♂♂ 26 ♀♀; b 23 ♀♀); Site 29 (a 2 ♀♀); Site 32 (a 23 ♂♂ 81 ♀); Site 39 (a 4 ♂♂ 22 ♀♀; b 9 ♂♂ 24 ♀♀); Site 40 (d 1 ♀); Site 41 (a 20 ♂♂ 27 ♀♀; b 8 ♀♀) (all leg. Nikolakakis); Site 32 (b 61 ♂♂ 13 ♀♀) (leg. Papadimitrakis); IRAKLEIO: Site 42 (e 56 ♂♂ 40 ♀♀; f 31 ♂♂ 41 ♀♀; g 6 ♂♂ 25 ♀♀; h 30 ♂♂ 3 ♀♀; i 37 ♂♂ 4 ♀♀; j 6 ♂♂; k 3 ♂♂) (all leg. Chatzaki); Site 43 (a 5 ♂♂ 39 ♀♀; b 1 ♂ 35 ♀♀; c 6 ♂♂ 3 ♀♀); Site 44 (a 12 ♂♂ 26 ♀♀; b 5 ♂♂ 10 ♀♀; c 4 ♂♂ 1 ♀); Site 45 (a 12 ♀♀); Site 47 (a 1 ♂ 9 ♀♀; b 3 ♂♂ 16 ♀♀; c 1 ♂; d 1 ♂; e 1 ♂ 2 ♀♀); Site 50 (b 1 ♀; e 1 ♂); Site 52 (a 9 ♂♂ 5 ♀♀; b 8 ♂♂ 22 ♀♀; c 17 ♂♂ 4 ♀♀); Site 53 (a 8 ♂♂ 6



FIGS 39-46

Gnaphosa bithynica: 39, palp of ♂, ventral view; 40, palp of ♂, retrolateral view; 41, epigyne; 42, vulva. *Pterotricha lentiginosa*: 43, epigyne; 44, vulva; 45, palp of ♂, ventral view; 46, palp of ♂, retrolateral view. Scale lines 0.1mm (43, 44), 0.2mm (39-42, 45-46).

♀♀; b 11 ♂♂ 23 ♀♀; c 3 ♂♂ 2 ♀♀); Site 54 (a 2 ♂♂ 2 ♀♀; b 5 ♂♂ 16 ♀♀) (all leg. Nikolakakis); Site 46 (a 2 ♀♀); Site 49 (a 3 ♀♀; b 1 ♂ 2 ♀♀; c 32 ♂♂ 2 ♀♀); Site 50 (c 1 ♂ 2 ♀♀); Site 51 (a 6 ♂♂ 43 ♀♀; b 68 ♂♂ 23 ♀♀) (all leg. Papadimitrakis); LASITHI: Site 55 (a 4 ♂♂ 9 ♀♀ [MHNG]; b 16 ♂♂ 15 ♀♀; c 1 ♂; e 5 ♂♂); Site 56 (a 13 ♂♂ 30 ♀; b 96 ♂♂ 17 ♀♀; c 7 ♂♂ 1 ♀; d 1 ♂ 4 ♀♀); Site 57 (a 3 ♂♂ 54 ♀♀; b 79 ♂♂ 8 ♀♀; c 3 ♂♂ 3 ♀♀; d 6 ♀♀); Site 73 (a 2 ♀♀; c 1 ♂; e 2 ♂♂ 1 ♀) (all leg. Chatzaki); Site 58 (a 1 ♀); Site 62 (a 2 ♂♂); Site 65 (a 1 ♀); Site 68 (a 8 ♀♀) (all leg. Papadimitrakis); Site 63 (a 1 ♂; b 1 ♀; c 7 ♂♂); Site 71 (a 10 ♂♂ 7 ♀♀; b 5 ♂♂ 9 ♀♀; c 7 ♂♂ 4 ♀♀) (all leg. Stathi); Site 59 (a 7 ♂♂; b 2 ♂♂; c 8 ♂♂); Site 61 (a 1 ♂; b 5 ♂♂ 1 ♀); Site 70 (a 2 ♂♂ 1 ♀; b 2 ♂♂) (all leg. Trichas). Material from further localities (vidit M. Chatzaki 2000, all in collection Hadjissarantos, ZMUA): CRETE: Vrachasi; Messara. PELOPONNISOS: Nafploio. ATTIKI: Koumoudouras lake; Penteli; Dionysos; Parnitha; Dafni; Kato Souli; Vari; Kiourka; Kareas; Ekali; Kokkinos Mylos; Kaissariani; Lavrio; Podonyftis.

Ecology. *P. lentiginosa* is the only *Pterotricha* found on Crete. It is the commonest and most abundant species of all spiders on Crete, dominating in all kinds of environments (Fig. 82), from the coast to the interior/mainland and reaching an altitudinal limit at 1950m. Adult specimens are found on the island during the whole year, with high activity in May-June (males and females) and in September (males) (Chatzaki *et al.*, 1998). Interestingly, however, it was not found on Gavdos island, where *Berlandina plumalis* (O.P.-Cambridge, 1872) is dominant. Regarding the distribution of *B. plumalis* (North Africa and south mediterranean countries to China, see Platnick, 2001), we believe that it has been imported into Gavdos by ships or by other anthropogenic means, thus excluding *P. lentiginosa* from the island, as they seem to share the same type of ecological niche. *B. plumalis* has never been recorded anywhere else in Greece and it has only been recently found on Crete, on the estuaries of Aposelemis river (Site 48).

Distribution. Mediterranean, Ukraine. GREECE: ATTIKI: Hymittos [6]; Elefsina [7]; Athina; Elefsina [8]; Hymittos, close to Liondari cave [9]. THESSALIA [8]. PELOPONNISOS [8]. EUBOIA [8]. IONIAN Isls.: Kerkyra [1, 8]. AEGEAN Isls.: Karystos; Stoura; Samos; Marathokampos; Ikaria [3]; Naxos [1]; Syros [7]; Santorini [7]; Dodekanisa [8]. CRETE: Chania: Askifou [2]; Chania; Lasithi [3]; Chania: Akrotiri; Governeto; Irakleio; Knossos [4]; Guripas-Panagia (?); Chania: Omalos, 1000m; Omalos, 1150m; Lasithi: Kastelli (NE of Neapoli) [5, 8]; Chania, Arkoudas cave (outside); Marathospilios cave (outside); Peristera cave [9].

Numbers in square brackets [] correspond to the following references: [1] Simon (1884, sub *Pythonissa lentiginosa*), [2] Kulczynski (1903b), [3] Strand (1916, sub *Pythonissa lentiginosa*), [4] Roewer (1928), [5] Giltay (1932), [6] Werner (1934), [7] Drensky (1935 sub *Pterotricha (Nomisia) lentiginosa*), [8] Hadjissarantos (1940), [9] Roewer (1959).

Gnaphosa bithynica (Kulczynski, 1903)

Figs 39-42, 82

Identification: Kulczynski (1903a, p. 641, Figs 6-7, 9-10).

Material. CRETE: CHANIA: Site 8 (a 9 ♀♀; b 1 ♀; c 1 ♀; d 2 ♂♂; e 14 ♂♂ 2 ♀♀; f 6 ♂♂ 33 ♀♀; g 9 ♀♀; h 8 ♀♀; i 3 ♀♀; k 3 ♀♀); Site 9 (a 5 ♂♂ [MHNG] 17 ♀♀; b 11 ♂♂ 10 ♀♀; c 3 ♂♂ 12 ♀♀; d 3 ♂♂ 19 ♀♀; e 12 ♂♂ 4 ♀♀; f 22 ♂♂ 10 ♀♀; g 15 ♂♂ 21 ♀♀); Site 10 (a 1 ♂) (all leg. Lymberakis); RETHYMNO: Site 35 (a 2 ♀♀); Site 36 (a 4 ♂♂) (all leg. Trichas); Site 37 (a 19 ♂♂ 17 ♀♀; b 1 ♂ 33 ♀♀; c 2 ♀♀; e 19 ♂♂ 7 ♀♀) Site 38 (a

2 ♂♂ 1 ♀; b 1 ♂ 2 ♀♀) (all leg. Chatzaki); LASITHI: Site 57 (a 7 ♂♂ 13 ♀♀; b 3 ♀♀ [MHNG]; c ♂ 1 ♀; d 1 ♂) (all leg. Chatzaki).

Taxonomy. The taxonomic characters of both male and female correspond well with the drawings of Kulczynski (1903a). Further studies will probably enable to place *G. bithynica* in synonymy with *G. rufula* (L. Koch, 1866). Ovtsharenko *et al.* (1992) recorded *G. rufula* from Kazakhstan (1 ♀) and Russia (1 ♂). Levy (1995) diagnosed this species on the base of two females from Lebanon and Israel, albeit questioning the correct matching of male and female by Ovtsharenko *et al.* (1992). The drawings of both authors (Figs 95-98 and 143-144 respectively) are very similar to those of *G. bithynica* reported here (Figs 39-42).

Ecology. *G. bithynica* is one of the few Gnaphosidae which reaches high altitudes on Crete (Fig. 82). Its distribution on Crete is confined to the main mountain massifs of the island, namely, Lefka Ori, Psiloreitis and Lasithiotika Ori. The species does not occur in the lowlands, its lowest record being from 1650m. Adults are present during summer.

Distribution. Turkey: Olympus Bithynicus, 2000-2500m (Kulczynski, 1903a); (first record for Europe).

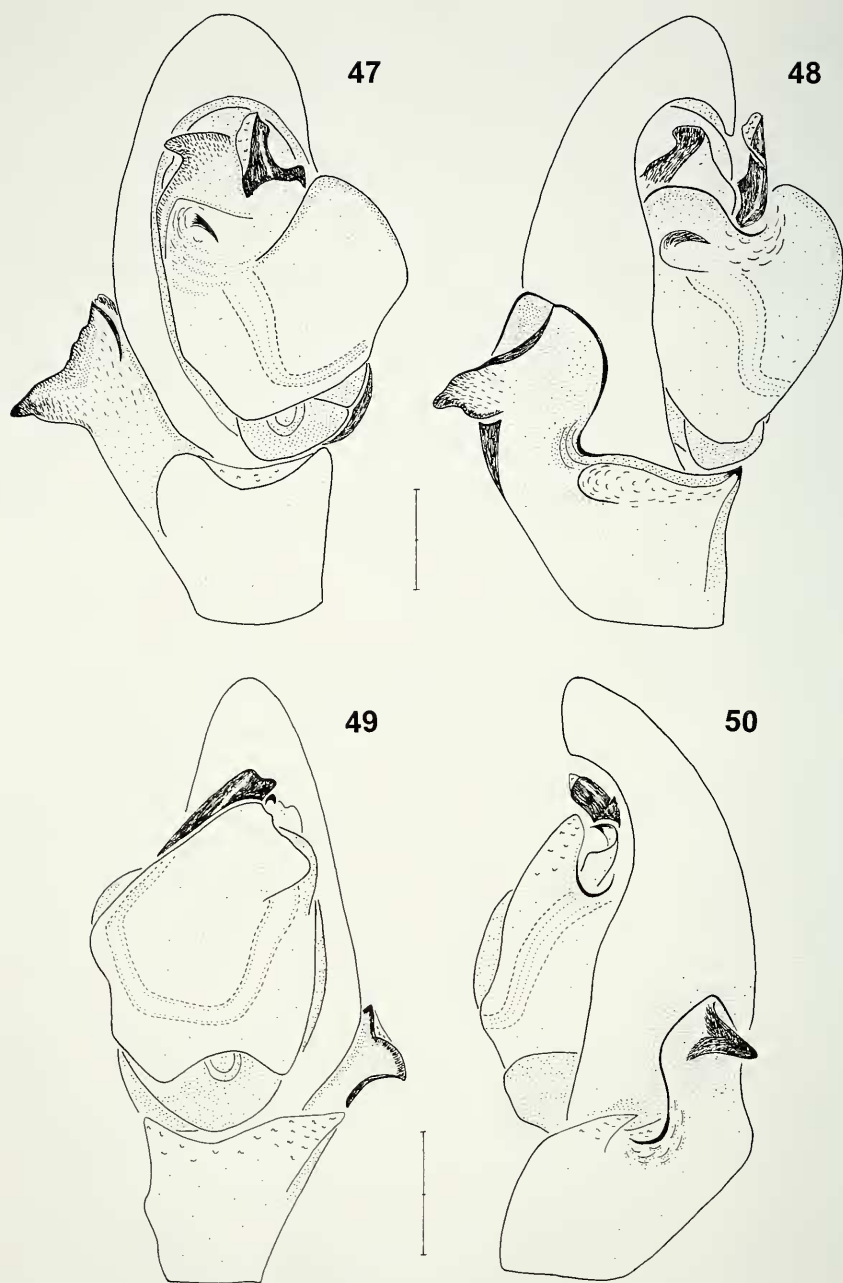
Nomisio excerpta (O.P.-Cambridge, 1872)

Figs 49-50, 53-54, 83

Identification: Levy (1995).

Material. CRETE: CHANIA: Site 1 (a 6 ♂♂ 1 ♀; b 1 ♀; c 1 ♀); Site 2 (a 11 ♂♂ 3 ♀♀; b 3 ♀♀; f 1 ♂); Site 3 (a 24 ♂♂ 20 ♀♀; b 5 ♀♀; e 1 ♂; f 15 ♂♂ 3 ♀♀); Site 5 (a 12 ♂♂ 7 ♀♀; b 12 ♀♀); Site 6 (c 5 ♂♂; d 16 ♂♂ 2 ♀♀; e 15 ♂♂ 2 ♀♀; f 2 ♂♂ 3 ♀♀; g 3 ♀♀; h 2 ♀♀); Site 7 (c 1 ♂; d 4 ♂♂; e 1 ♂ 1 ♀; f 2 ♀♀); Site 8 (e 3 ♂♂; f 1 ♂; g 1 ♀; i 1 ♀) (all leg. Lymberakis); Site 11 (b 2 ♂♂) (leg. Stathi); Site 13 (c 2 ♂♂; d 1 ♀); Site 14 (c 6 ♂♂ 1 ♀; d 2 ♂♂ 1 ♀); Site 15 (a 5 ♀♀; c 11 ♂♂ 2 ♀♀; d 4 ♂♂ 14 ♀♀); Site 16 (a 2 ♀♀; c 29 ♂♂ 6 ♀♀; d 4 ♂♂ 7 ♀♀); Site 17 (a 1 ♀; b 2 ♀♀; c 7 ♂♂ 2 ♀♀; d 2 ♂♂ 1 ♀); Site 18 (c 3 ♂♂ 1 ♀; d 1 ♂ 2 ♀♀); Site 19 (a 1 ♀; c 20 ♂♂ 3 ♀♀; d 3 ♀♀); Site 20 (a 21 ♂♂ 3 ♀♀; b 3 ♂♂ 1 ♀); Site 21 (c 1 ♀; d 1 ♂ 2 ♀♀); Site 22 (a 2 ♂♂ 1 ♀; b 1 ♀); Site 23 (c 14 ♂♂ 5 ♀♀) (all leg. Paragamian); RETHYMNO: Site 25 (a 15 ♂♂ 2 ♀♀); Site 26 (a 1 ♂; b 1 ♀) (all leg. Lymberakis); Site 27 (a 10 ♂♂ 2 ♀♀; f 2 ♂♂); Site 34 (a 5 ♂♂ 6 ♀♀; b 4 ♀♀; e 13 ♂♂) (all leg. Chatzaki); Site 30 (a 2 ♂♂); Site 33 (a 2 ♀♀) (all leg. Trichas); Site 28 (a 7 ♂♂ 3 ♀♀; b 10 ♀♀); Site 29 (a 2 ♂♂ 2 ♀♀); Site 32 (a 11 ♂♂ 17 ♀♀); Site 39 (a 5 ♀♀; b 3 ♂♂ 2 ♀♀); Site 40 (b 1 ♂ 1 ♀); Site 41 (a 8 ♂♂ 1 ♀; b 1 ♀) (all leg. Nikolakakis); IRAKLEIO: Site 42 (e 46 ♂♂ 1 ♀; g 5 ♀♀; f 6 ♂♂ 6 ♀♀) (all leg. Chatzaki); Site 43 (a 7 ♂♂; b 3 ♀♀); Site 44 (a 1 ♂; b 2 ♂♂ 4 ♀♀; c 1 ♀); Site 45 (a 2 ♂♂); Site 47 (a 3 ♂♂; b 2 ♂♂ 4 ♀♀; e 2 ♂♂); Site 50 (b 6 ♂♂); Site 52 (a 1 ♂; b 25 ♂♂ 6 ♀♀); Site 54 (b 3 ♂♂) (all leg. Nikolakakis); Site 46 (a 2 ♀♀); Site 49 (a 3 ♂♂ 1 ♀; b 2 ♂♂ 2 ♀♀; c 2 ♀♀); Site 50 (c 2 ♀♀); Site 51 (a 3 ♀♀; b 1 ♀) (all leg. Papadimitrakis); Site 48 (a 5 ♂♂) (leg. Trichas); LASITHI: Site 55 (a 5 ♂♂; b 2 ♂♂ 4 ♀♀ [MHNG]); Site 56 (a 3 ♂♂ 1 ♀; b 1 ♂); Site 73 (a 1 ♀; e 1 ♂) (all leg. Chatzaki); Site 58 (b 1 ♀); Site 62 (a 2 ♂♂ 1 ♀; b 4 ♀♀); Site 65 (a 1 ♂ 4 ♀♀); Site 68 (a 2 ♂♂ 7 ♀♀) (all leg. Papadimitrakis); Site 63 (b 1 ♂ 4 ♀♀); Site 71 (a 5 ♂♂; b 14 ♂♂ 21 ♀♀; c 1 ♀) (all leg. Stathi); Site 59 (c 6 ♂♂); Site 61 (b 2 ♂♂); Site 66 (a 7 ♂♂ 4 ♀♀); Site 67 (a 6 ♂♂ 6 ♀♀); Site 70 (a 21 ♂♂ 5 ♀♀; b 7 ♀♀); Site 72 (a 1 ♂; b 2 ♀♀) (all leg. Trichas).

Taxonomy. There is some confusion in the literature concerning this species, since the male palpal organs of *N. excerpta* and *N. recepta* (Pavesi, 1880) are very much alike. Dalmás (1921) and Levy (1995) have already reported on the problem; the latter also indicated earlier misidentifications. The comparison between *N. recepta*



FIGS 47-50

Nomisia ripariensis: 47, 48. *Nomisia excerpta*: 49, 50. Palp of ♂, ventral view (47, 49), palp of ♂, retrolateral view (48, 50). Scale lines 0.2mm.

and *N. excerpta* (Levy, 1995, Figs 36-40 and 31-35 respectively and Di Franco, 1986, Figs 2-5) and our drawings (Figs 49-50, 53-54) leaves no doubt that specimens from Crete belong to *N. excerpta* (see tibial apophysis and epigyne).

Ecology. *N. excerpta* is the commonest *Nomisia* on Crete, with a wide distribution all over the island, except for high altitudes over 1650m (Fig. 83). It occurs along with *P. lentiginosa* and with its congeners. *N. excerpta* has a long period of maturity (spring to autumn). In contrast to *P. lentiginosa* and *Berlandina plumalis*, it has a single peak of activity during late spring.

Distribution. Canary IIs., Tunisia, Israel; (first record for Europe).

***Nomisia ripariensis* (O.P.- Cambridge, 1872)**

Figs 47-48, 51-52, 83

Identification: Levy (1995, p. 931, Figs 26-30).

Material. CRETE: RETHYMNO: Site 25 (a 3 ♂♂); Site 26 (a 1 ♂) (all leg. Lymberakis); Site 39 (a 1 ♀); Site 40 (b 1 ♀); Site 41 (a 1 ♂) (all leg. Nikolakakis); LASITHI: Site 64 (d 2 ♂♂ 2 ♀♀) (leg. Papadimitrakis); Site 66 (a 1 ♂) (leg. Trichas). Material from further localities (vidit M. Chatzaki 2000, all in collection Hadjissarantos, ZMUA): CRETE: Kapsaliana; PELOPONNISOS: Isthmia; Melas Tryma; STEREA ELLADA: Amfilochia, Chani Katsouli; Agrinio: Agios Vlassis; Agios Sotiras; Agios Christophoros.

Taxonomy. *N. ripariensis* is a well defined species. Our drawings (Figs 47-48, 51-52) fit well those of Levy (1995). The tibial apophysis of this species is very similar to that of *Nomisia conigera* (Spassky, 1941) (p.22, Fig. 12). This similarity has been already stressed by Ovtsharenko & Fet (1980). The examination of the type of *N. conigera* might prove that it is in fact a synonym of *N. ripariensis*.

Ecology. This species is not as common as *N. excerpta*. It is much less abundant, but very often it occurs along with *N. excerpta* (Fig. 83). This is consistent with the fact that Greece is at the western limit of its range of distribution. Matur spiders occur from spring to early summer.

Distribution. Greece to Azerbaijan. GREECE: Attiki: Pendeliko (Roewer, 1928: 114); Pendeli; Podoniftis; Parnitha - Mola; Parnitha - Palaiochori; Parnitha, 1000m; Kato Souli; Hymittos-Kareas (Hadjissarantos, 1940: 76); Makedonia: Thessaloniki (Simon, 1917: 274); Rodos: Bristowe (1935: 746); Crete: Chania: Governeto monastery; Katholiko cave (entrance); Arkalo cave (entrance) (Roewer, 1928: 114).

***Haplodrassus creticus* (Roewer, 1928) comb. n.**

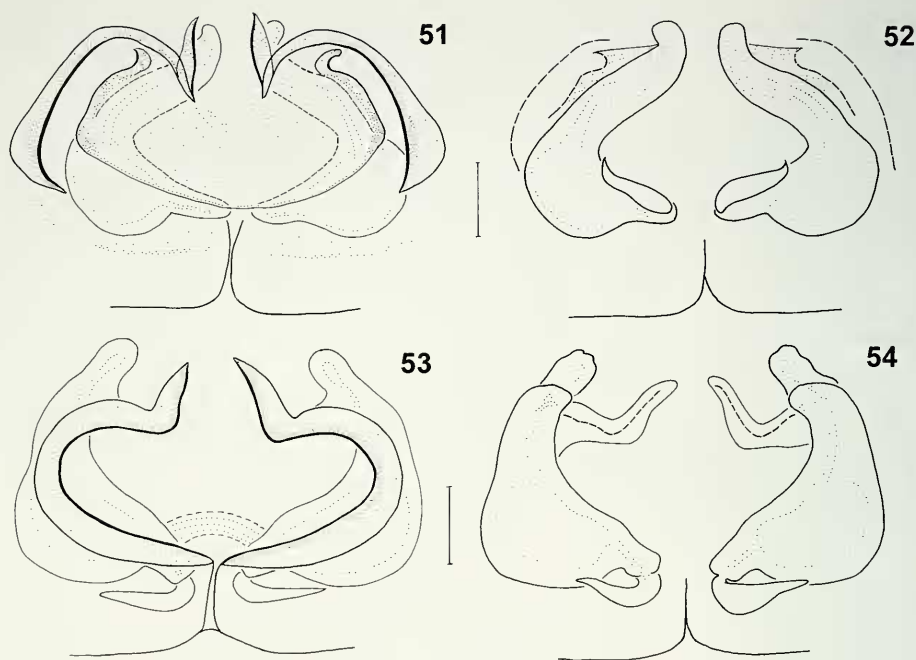
Figs 55-60, 84

Drassodes creticus Roewer, 1928, CRETE: Irakleio: Knossos (type locality).

Identification: Roewer (1928, p. 104, Fig. 9).

Material. Comparative material examined: *D. creticus*: 1♂ holotype, 1♂ Paratype, SMF: CR 577/27.

CRETE: CHANIA: Site 2 (e 3 ♂♂; e 3 ♂♂; f 6 ♂♂ 1 ♀); Site 3 (e 17 ♂♂ 6 ♀♀; f 1 ♀); Site 6 (m 2 ♀♀); Site 7 (c 1 ♂); Site 8 (d 7 ♂♂ 2 ♀♀) (all leg. Lymberakis); Site 11 (b 1 ♂) (leg. Stathi); RETHYMNO: Site 25 (a 1 ♂) (leg. Lymberakis); Site 30 (a 1 ♀); Site 33 (a 1 ♂) (all leg. Trichas); Site 34 (a 5 ♂♂ 15 ♀♀; b 1 ♀; d 2 ♂♂; e 7 ♂♂ 9 ♀♀) (all leg. Chatzaki); Site 28 (a 1 ♀); Site 40 (a 1 ♂) (all leg. Nikolakakis); IRAKLEIO: Site 43 (a 7 ♂♂ 11 ♀♀); Site 45 (a 2 ♂♂) (all leg. Nikolakakis); Site 49 (a 3 ♂♂ 2 ♀♀ [MHNG]); Site 51 (a 1 ♀) (all leg. Papadimitrakis); LASITHI: Site 55 (e 1 ♀); Site 56 (a 1 ♂; d 6 ♂♂ 6 ♀♀); Site 73 (d 1 ♂) (all leg. Chatzaki); Site 64 (b 1 ♂; c 1 ♀) (all leg. Nikolakakis); Site 66 (a 11 ♂♂ 4 ♀♀); Site 70 (a 4 ♂♂ 4 ♀♀) (all leg. Trichas); Site 71 (a 1 ♂; e 2 ♂♂) (all leg. Stathi).



Figs 51-54

Nomisia ripariensis: 51, 52. *Nomisia excerpta*: 53, 54. Epigyne (51, 53), vulva (52, 54). Scale lines 0.1mm.

Taxonomy. Roewer's description (1928) was based on two males found in the ruins of the archaeological site of Knossos, Irakleio. It surely belongs to the genus *Haplodrassus* and not to *Drassodes*, since the characteristic notch of the trochanters is missing and the genital organs conform to those of *Haplodrassus*. Here, the female is described for the first time.

Measurements ♀ (♂), n = 7(6): TL: 4.3-6.5 (3.5-4.8), PL: 1.8-2.2 (1.5-2), PW: 1.5-1.9 (1.1-2), OL: 2.2-3.6 (1.9-2.5), PL/PW: 1-1.33 (0.9-1.36), AME: 0.05 (0.1), ALE: 0.06 (0.1), PME: 0.1 (0.12), PLE: 0.06 (0.1), AME-AME: 0.05 (0.08), AME-ALE: 0.05 (0.02), PME-PME: 0.03 (0.05), PME-PLE: 0.1 (0.1).

♂ ♀ Yellow-brown, medium-sized spiders. Carapace brown in cephalic part, widening and yellowish in thoracic part. Fovea small, dark. Sternum oval, labium and maxillae longer than wide. Chelicerae brown, with 2 posterior and 1 anterior teeth, the latter much larger, forming a keel. Eyes circular, PME oval, posterior row slightly procurved. Opisthosoma greyish yellow with a light pattern (probably more distinct in fresh specimens).

Legs: Spination: Fe: I-II, IV d 1-3; III d 4. Pa: - . Ti: I-II - ; III v 6 p 3 r 2; IV v 6 p 2 r 3 (variable). Me: I-II v 2; III-IV spinose.

♂ Pedipalp (Figs 55-58): Tibial apophysis short, truncate. Tegular apophysis characteristic, embolus long, dorsally broadened and truncate. Dorsal view, see Fig. 56.

Epigyne (Fig. 59): Anterior margin wider than areola. Lateral margins hiding the genital orifices, with almost parallel sclerotizations. Introductory pouches often covered by a mating plug.

Vulva (Fig. 60): Receptacles globular, with bulging introductory ducts and small glands at their lateral margins.

Ecology: *H. creticus* is the most common *Haplodrassus* species on Crete and has no specific habitat preference (Fig. 84). It reaches altitudes of 1650m, but also occurs near the beaches. Adults occur from spring to early summer.

Distribution. Crete (Cretan endemic ?).

***Haplodrassus signifer* (C. L. Koch, 1839)**

Figs 61, 84

Identification: Grimm (1985, p. 146, Figs 146, 170-171).

Material. CRETE: RETHYMNO: Site 32 (a 2 ♂♂ 2 ♀♀) (leg. Nikolakakis); LASITHI: Site 56 (a 1 ♂ 1 ♀; d 2 ♂♂) (all leg. Chatzaki). Material from further locations (vidit M. Chatzaki 2000, all in collection Hadjissarantos, ZMUA): PELOPONNISOS: Argos; Korinthia, Perigiali; Tegea; Pyrgos; Isthmia; EUBOIA: Kymi.

Ecology. This species is not very common on Crete (Fig. 84), although it is very common in Italy, even in Sicily (Di Franco 1994; 1996; 1997a; 1997b; 1998). It is restricted to higher elevations, appearing to be adapted to cooler climates. Like in *H. creticus*, adults are present during spring.

Distribution. Holarctic. GREECE: Attiki: Athens; Faliro; Lavrio; Voula; Parnitha - Agia Triada; Ekali; Kopanas; Melissia; Kaisariani; Parnitha - Fyli; Liopesi; Aigina; Vouliagmeni; Kato Souli (Hadjissarantos, 1940: 78); Crete: Chania: Topolia; Lakkos (Roewer, 1928: 103).

***Haplodrassus dalmatensis* (L. Koch, 1866)**

Figs 62, 62a-b, 84

Drassodes lithobius Roewer, 1928 (p. 101, Fig. 7), CRETE: Chania, Akrotiri (type locality).

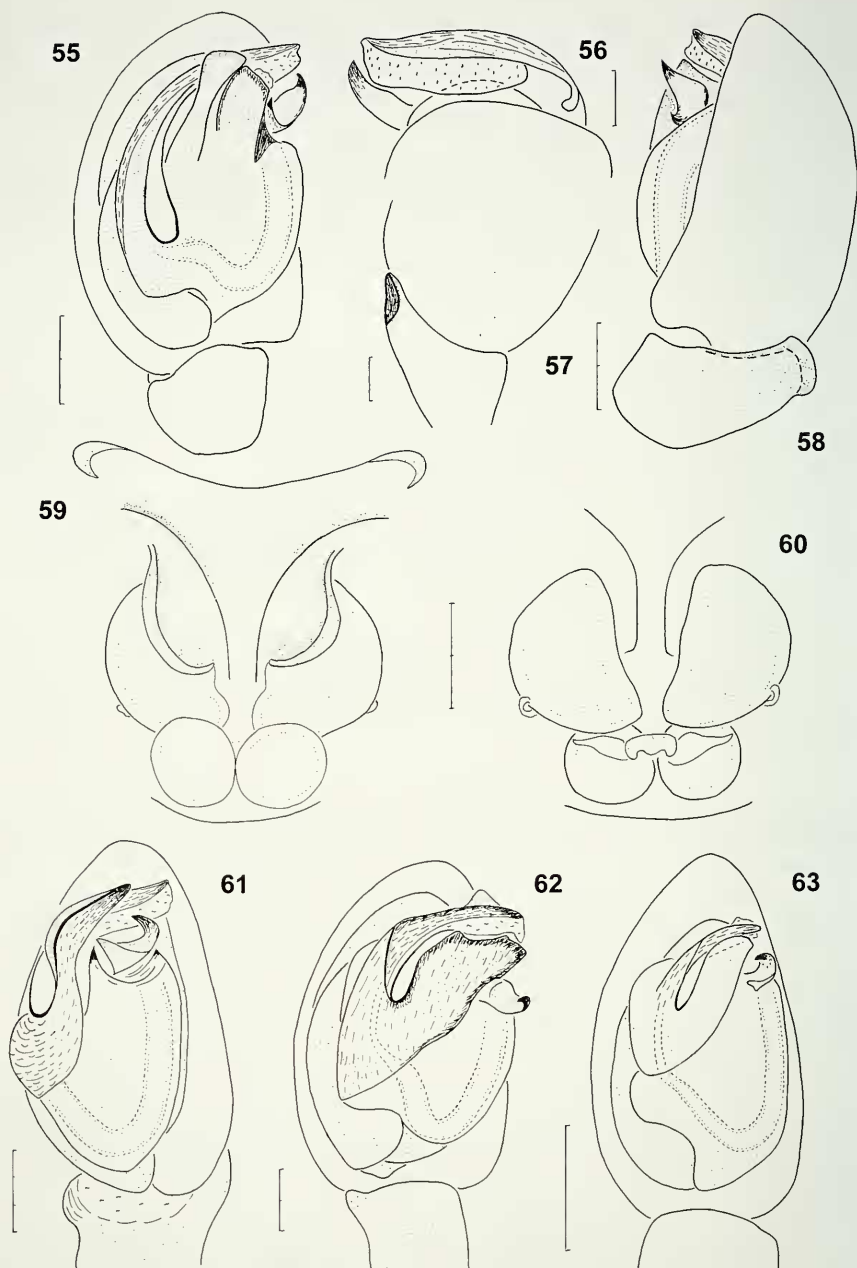
Syn. n.

Identification: Grimm (1985, p. 138, Figs 156, 164-165).

Material. Comparative material examined: *Drassodes lithobius*: 1 ♀ holotype, SMF: CR 583/33.

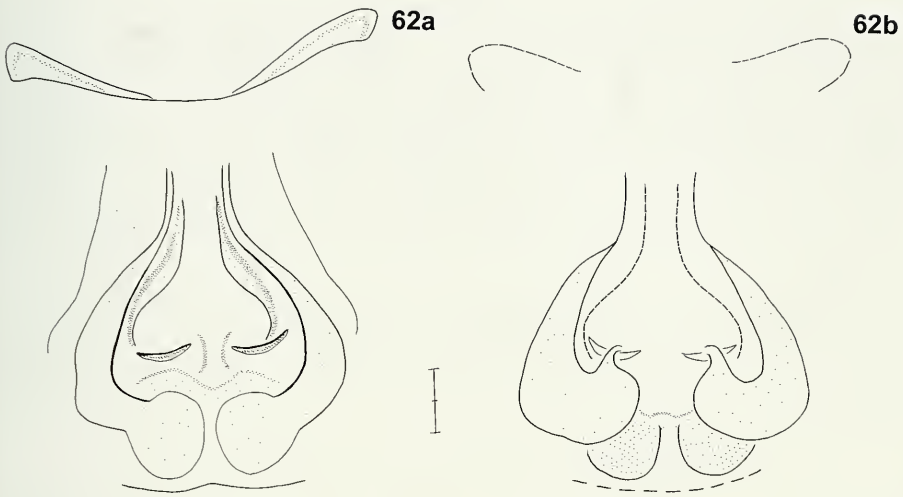
CRETE: CHANIA: Site 3 (f 1 ♂ 2 ♀♀); Site 4 (a 1 ♂ 2 ♀♀) (all leg. Lymberakis); Site 13 (c 7 ♂♂ 11 ♀♀); Site 14 (c 16 ♂♂ 5 ♀♀); Site 15 (c 1 ♂ 4 ♀♀); Site 19 (c 10 ♂♂ 2 ♀♀); Site 21 (b 1 ♀; c 1 ♂); Site 22 (a 1 ♀) (all leg. Paragamian); RETHYMNO: Site 26 (a 1 ♀) (leg. Lymberakis); Site 32 (a 14 ♂♂ 4 ♀♀; b 1 ♀) (all leg. Nikolakakis); Site 36 (a 1 ♂ 2 ♀♀) (leg. Trichas); Site 37 (a 15 ♂♂; e 2 ♂♂ 1 ♀ [MHNG]) (all leg. Chatzaki); IRAKLEIO: Site 51 (a 1 ♀) (leg. Papadimitrakis); LASITHI: Site 56 (a 2 ♂♂; b 1 ♂) (all leg. Chatzaki); Site 58 (a 1 ♀); Site 64 (d 6 ♂♂ 2 ♀♀) (all leg. Papadimitrakis); Site 64 (c 2 ♂♂) (leg. Nikolakakis). Material from further localities (vidit M. Chatzaki 2000, all in collection Hadjissarantos, ZMUA): ATTIKI: Loutsas; PELOPONNISOS: Pyrgos; IPEIROS: Konitsa; Ioannina lake.

Taxonomy. Roewer (1928) described a new species, *Drassodes lithobius*, based on a female from Crete. The type specimen has been examined and was found to be conspecific with *H. dalmatensis*. Also the type of *Drassodes acrotirius* Roewer, 1928 has been examined; it is very close to *H. dalmatensis*, although larger in size and with some difference in the shape of spermathecae (Fig. 62a-b, see also Grimm 1985, Figs 164-165).



FIGS 55-63

Haplodrassus creticus: 55, palp of ♂, ventral view; 56, distal part of ♂ palp, dorsal view; 57, palp of ♂, tibial apophysis, dorsal view; 58, palp of ♂, retrolateral view; 59, epigyne; 60, vulva. *H. signifer*: 61. *H. dalmatensis*: 62. *H. minor*: 63. Palp of ♂, ventral view (61-63). Scale lines 0.1mm (56-57, 63), 0.2mm (55, 58-60, 62), 0.3mm (61).



FIGS 62 a, b

Drassodes acrotirius: 62a, epigyne; 62b, vulva.

Ecology. This species is common on Crete, occupying all kinds of habitats and altitudes (Fig. 84). It is equally distributed in sandy and dry habitats, as well as in wetlands and at high altitudes. It is the only *Haplodrassus* found on Gavdos. This record is in contrast to the specific ecological preferences of this species towards grasslands, as reported by Di Franco (1996), but it accords with her comment about the preference of *H. dalmatensis* for dry, sunny and open habitats with sparse vegetation (Di Franco, 1992b). The peak of its activity is in late spring, but adults occur during the whole summer and at the beginning of autumn.

Distribution. Palearctic. GREECE: Attiki: Psychiko (Hadjissarantos, 1940: 76); Crete: Rethymno (Roewer, 1928: 103).

***Haplodrassus minor* (O.P.-Cambridge, 1879)**

Figs 63, 84

Identification: Grimm (1985, p. 144, Figs 176-178).

Material. CRETE: IRAKLEIO: Site 49 (a 1 ♂; b 1 ♂) (all leg. Papadimitrakis).

Ecology. This small species is the rarest *Haplodrassus* on Crete (Fig. 84), which is not surprising, as it is distributed mainly at higher latitudes. Adult specimens occur in late spring to summer.

Distribution. Europe to Russia; (first record for Greece).

***Leptodrassus albidus* Simon, 1914**

Figs 64-65, 72, 85

Identification: Dalmas (1919, p. 244, Figs 3-4), Di Franco (2000, p. 479, Figs 1-2).

Material. CRETE: CHANIA: Site 13 (a 1 ♂; c 6 ♂♂; d 10 ♂♂ 15 ♀♀; d 2 ♂♂ 2 ♀♀ [MHNG]) (all leg. Paragamian); RETHYMNO: Site 39 (b 1 ♂) (leg. Nikolakakis); IRAKLEIO: Site 49 (b 1 ♀) (leg. Papadimitrakis); LASITHI: Site 64 (d 1 ♂) (leg. Papadimitrakis).

Taxonomy. This species is easily identified by the two-lobed tibial apophysis of males and by the long hood that covers the median cavity of the epigyne.

♂ **Pedipalp** (Figs 64-65): Tibial apophysis with a broad base, a round ventral and a dorsal blade-like process. Bulbus complicated as in other species of the genus, being "apically armed with closely grouped laminae and often pointed, nearly indistinguishable sclerites", as reported by Levy (1999b). Tegulum with a pointed retrolateral (r) and a complex ventral (v) apophysis. Embolus filiform, its base rising from proximal end of tegulum, running along its prolateral side, mostly hidden by a membrane.

Epigyne (Fig. 72): Median cavity covered by a long hood, with a setose base connected to the lateral margins, and with a sclerotized free part that covers almost three quarters of the cavity. Introductory orifices opening in the posterior half of the cavity, covered by the hood. Some female specimens from Gavdos probably with a mating plug.

Vulva: Introductory ducts curved, spermathecae globular.

Ecology. It seems that *L. albidus* does not form dense populations on Crete, as is the case for all its congeners. It occurs close to the coast and in degraded phrygana and abandoned cultivations (Fig. 85).

Distribution. Spain, France, Italy, Malta; (first record for Greece).

Leptodrassus femineus Simon, 1873

Figs 66-67, 73, 85

Identification: Dalmas (1919, p. 243, Figs 1-2), Di Franco (1986, p. 144, Figs 6-7).

Material. CRETE: CHANIA: Site 2 (a 1 ♂ [MHNG]); Site 3 (c 1 ♂) (all leg. Lymberakis); RETHYMNO: Site 28 (b 1 ♀ [MHNG]); Site 39 (b 7 ♂♂) (all leg. Nikolakakis); IRAKLEIO: Site 42 (g 1 ♀) (leg. Chatzaki); Site 44 (a 1 ♂; b 1 ♀) (all leg. Nikolakakis); Site 49 (b 1 ♂ 1 ♀) (leg. Papadimitrakis); LASITHI: Site 58 (a 1 ♂); Site 65 (a 1 ♂) (all leg. Papadimitrakis); Site 73 (e 2 ♂♂) (leg. Chatzaki).

Taxonomy. This is the type species of the genus. Tibial apophysis very characteristic (Figs 66-67), its outline changing with the position. Ventral lobe more rounded than in *L. albidus* and dorsal lobe shorter. In females, the setose part of the hood is extended and the median cavity is more rounded than in *L. albidus* (Fig. 73).

Ecology. This species is the most widespread *Leptodrassus* on Crete (Fig. 85). It occurs along with *L. albidus*. Maturity lasts from late spring to late summer as in many *Leptodrassus* species. Adult males occur more frequently in spring and adult females in summer.

Distribution. France, Italy, Corsica, Algeria, Portugal; (first record for Greece).

Leptodrassus hadjissaranti Chatzaki sp. n.

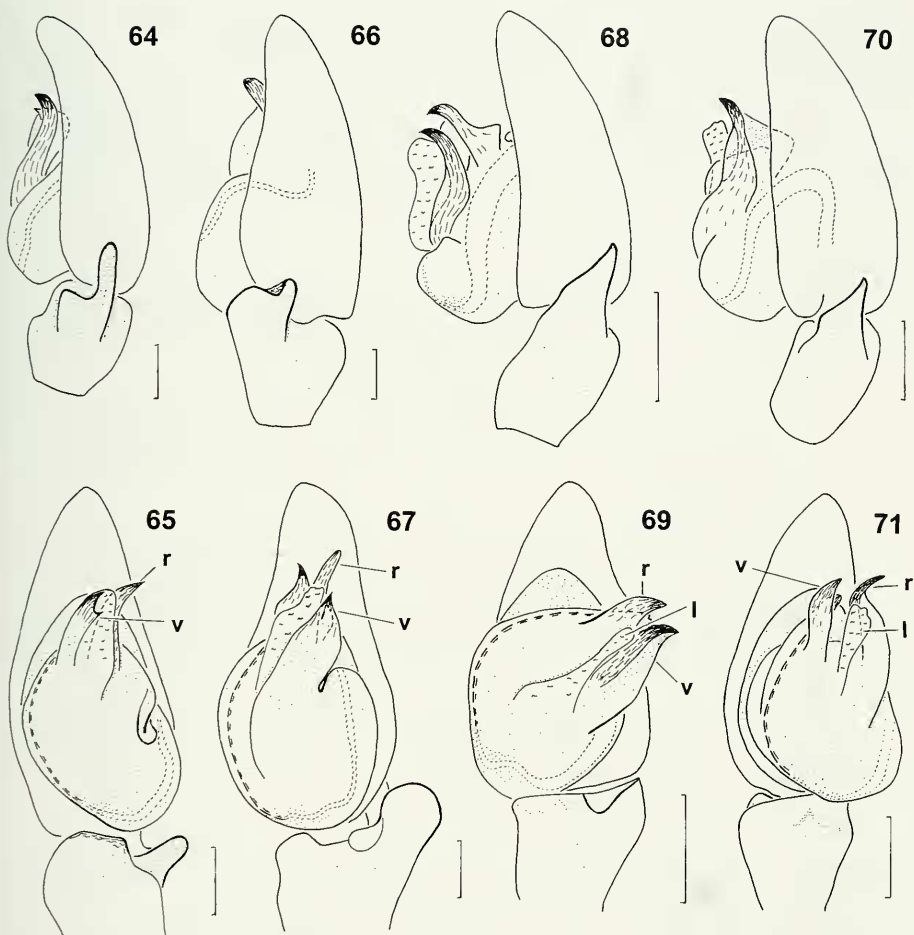
Figs 68-69, 76-77, 85

Etymology: This species is dedicated to Dr Haralambos Hadjissarantos, the first Greek arachnologist who worked mainly with the spiders of Attiki and of mainland Greece.

Material. Type material: Site 64e (Bramiana Lake, leg. Papadimitrakis, 1 ♂ holotype 1 ♀ Paratype [NHMC]); Site 41b (Rizikas, leg. Nikolakakis, 1 ♀ paratype [MHNG]).

CRETE: RETHYMNO: IRAKLEIO: Site 47 (b 1 ♀) (leg. Nikolakakis); LASITHI: Site 64 (d 1 ♀) (leg. Papadimitrakis).

Taxonomy. Measurements ♂ (♀), n = 1 (4): TL: 2 (2.7-3.3), PL: 0.7 (1.1-1.3), PW: 0.5 (0.7-0.8), OL: 1 (1.5-1.8), PL/PW: 1.4 (1.37-1.62), Legs: I: 2 (2.9-3.2), II:



FIGS 64-71

Leptodrasus albidus: 64, 65. *L. femineus*: 66, 67. *L. hadjissaranti* sp. n.: 68, 69. *L. manolisi* sp. n.: 70, 71. Palp of ♂, retrolateral view (64, 66, 68, 70), palp of ♂, ventral view (65, 67, 69, 71). Scale lines 0.1mm.

2.1 (2.5-3), III: 1.5 (2.1-2.5), IV: 2.4 (3.1-3.7), Pa/Ti: I:0.4 (0.5), II:0.5 (0.4), III:0.5 (0.75), IV:0.4 (0.57).

♂ ♀: Very small, yellowish spiders, with general appearance similar to the other species of the genus.

♂ Pedipalp (Figs 68-69): Tibial apophysis single-lobed, ending in a pointed tip. Ventral apophysis (v) of bulbus distinct, with adjacent transparent lamella (l), retrolateral apophysis (r) large. Embolus long, covered by a membrane.

Epigyne (Fig. 76): Anterior hood broad, cap-like, its basal half setose, distal half sclerotized, often interspersed with a mating plug. Epigyne with an exceptional character not found in the other species of the genus, i.e. a pair of membranous

fingers close to the epigastric furrow, originating from the lateral margins of the epigyne. Apparently these structures inflate during copulation.

Vulva (Fig. 77): As in *L. albidus*, introductory ducts almost at the same level as the globular spermathecae.

Ecology. *L. hadjissaranti* sp. n. has been found mostly in humid places, but also in phrygana at low elevations on the mainland of Crete (Fig. 85).

Distribution. Crete.

***Leptodrassus manolisi* Chatzaki sp. n.**

Figs 70-71, 85

Etymology. This species is dedicated to its collector, Mr Manolis Nikolakakis.

Material. Type material: Site 40b (Saktouria, leg. Nikolakakis, 1 ♂ holotype [NHMC]); Site 47c (Panagia Almyri, leg. Nikolakakis, 1 ♂ paratype [MHNG]).

Taxonomy. Measurements ♂ (♀), n = 2: TL: 2, PL: 1, PW: 0.7, OL: 1, PL/PW: 1.42, Legs: I:2.6, II:2.3, III:2.2, IV:3.2, Pa/Ti: I:0.5, II:0.5, III:0.44, IV:0.35.

♂ ♀: General appearance same as in the rest of *Leptodrassus* species. Very small yellowish spiders.

♂ Pedipalp (Figs 70-71): Tibial apophysis single-lobed, very similar to that of *L. hadjissaranti* sp. n., its anterior angle more prominent and its end more pointed. Retrolateral apophysis (r) of bulbus long, with a S-shaped, pointing end, well separated from the ventral apophysis (v). The shape of the membranous lamella (l) differs from that of *L. hadjissaranti* sp. n. (Fig. 71, compare with Fig. 69). Embolus hidden by a membrane.

The female is still unknown.

Ecology. This species seems to prefer sandy substrates in wet places (Fig. 85). Adults have been found in spring and summer.

Distribution. Crete.

***Leptodrassus pupa* Dalmás, 1919**

Figs 74-75, 85

Identification: Levy (1999b, p. 447, Fig. 40), Dalmás (1919, p. 248, Fig. 9).

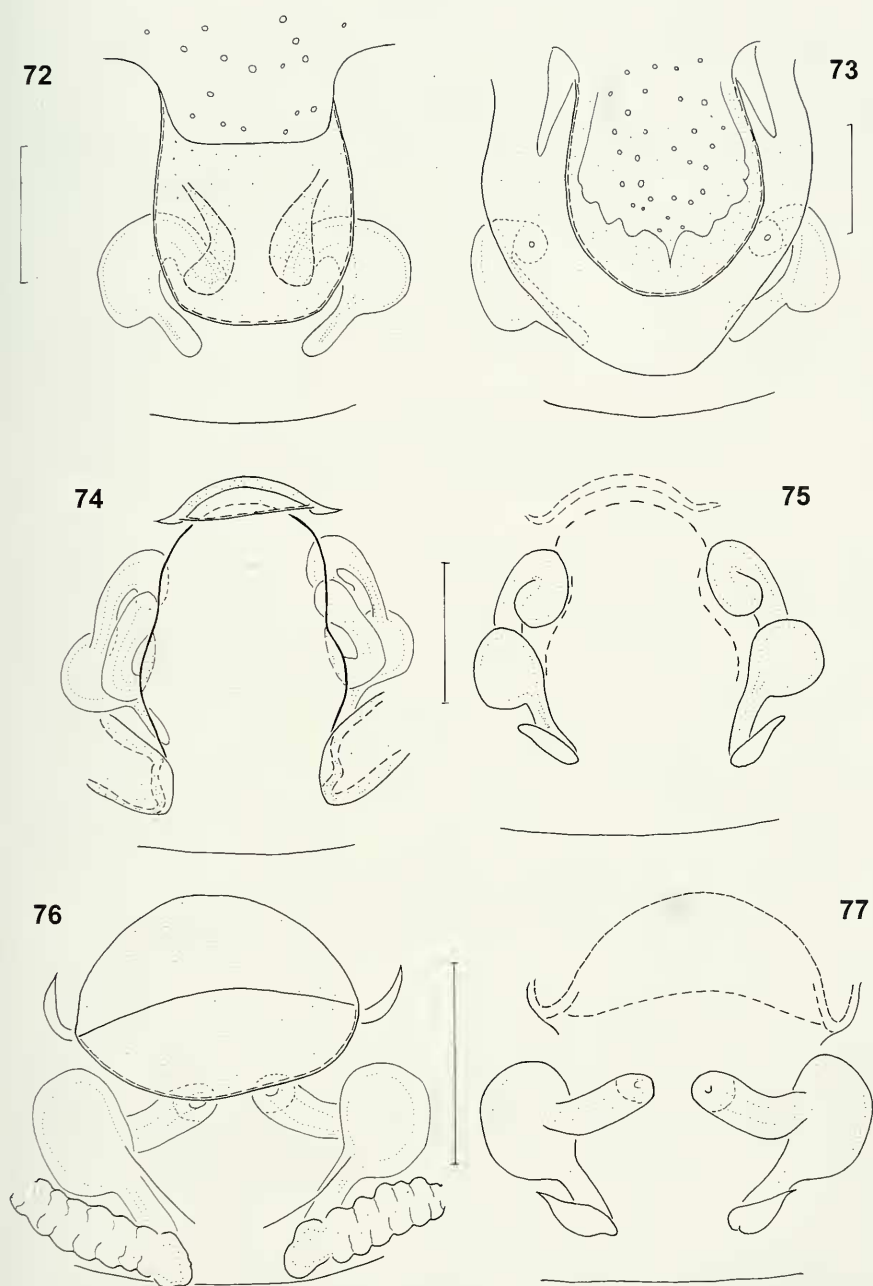
Material. CRETE: RETHYMNO: Site 39 (a 1 ♀ [MHNG]) (leg. Nikolakakis); IRAKLEIO: Site 45 (b 1 ♀) (leg. Nikolakakis); Site 50 (d 2 ♀ ♀) (leg. Papadimitrakis); LASITHI: Site 72 (b 1 ♀) (leg. Trichas).

Taxonomy. This species has been identified only from females collected from three localities on Crete. Epigyne characterized by a long central cavity, encircled by a slightly sclerotized rim (Fig. 74). Anterior hood tiny, not covering the cavity. The arrangement of spermathecae differs from those of other *Leptodrassus* (Fig. 75).

Distribution. Egypt; (first record for Europe).

CONCLUDING REMARKS

In this paper we present the taxonomy and distribution of 22 species of the family Gnaphosidae, which represents about 32% of the total number of gnaphosids on the island of Crete (based on unpublished data). Two of them are new to science (*Leptodrassus hadjissaranti* sp. n. and *L. manolisi* sp. n.), five are new records for Europe (*Anagraphis pallens*, *Berinda ensigera*, *Gnaphosa bithynica*, *Nomisia excer-*



FIGS 72-77

Leptodrassus alboides: 72. *L. femineus*: 73. *L. pupa*: 74-75. *L. hadjissaranti* sp. n.: 76-77. Epigyne (72-74, 76), vulva (75, 77). Scale lines 0.1mm.



FIG. 78
Anagraphis pallens, distribution on Crete.



FIG. 79
Poecilochroa senilis, distribution on Crete.



FIG. 80
Berinda amabilis, *B. ensigera*, *Callilepis cretica*, distribution on Crete.



FIG. 81

M. albobittata, *Micaria coarctata*, *M. dives*, *M. pygmaea*, distribution on Crete.



FIG. 82

Pterotricha lentiginosa, *Gnaphosa bithynica*, distribution on Crete.



FIG. 83

Nomisia excerpta, *N. ripariensis*, distribution on Crete.



FIG. 84

Haplodrassus creticus, *H. dalmatensis*, *H. minor*, *H. signifer*, distribution on Crete.

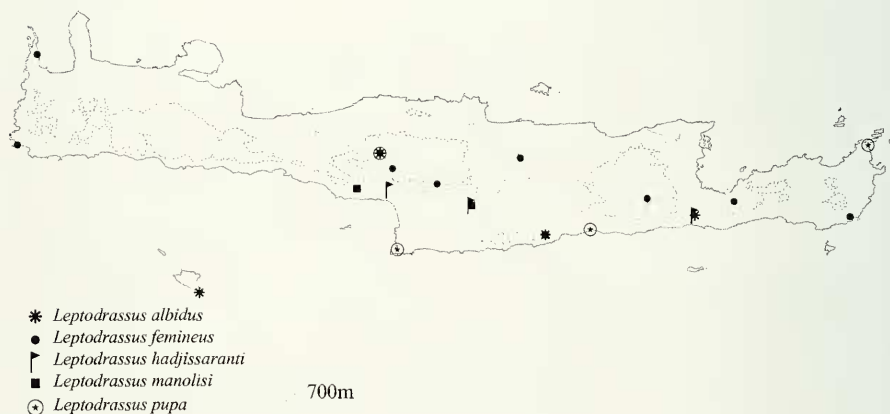


FIG. 85

Leptodrassus albidus, *L. femineus*, *L. hadjissaranti* sp. n., *L. manolisi* sp. n., distribution on Crete.

pta and *Leptodrassus pupa*), four are new records for Greece (*Poecilochroa senilis*, *Haplodrassus minor*, *Leptodrassus albidus* and *L. femineus*) and *Micaria albovittata* is a new record for Crete, but was already known from other parts of Greece. Two new combinations (*Berinda ensigera* [from *Drassodes*] and *Haplodrassus creticus* [from *Drassodes*]) and four new synonymizations (*Drassodes flavomaculatus* with *Poecilochroa senilis*, *Talanites aculeatus* with *Berinda amabilis*, *Drassodes reimoseri* with *Berinda ensigera* and *Drassodes lithobius* with *Haplodrassus dalmatensis*) are proposed.

Most of these species have an east Mediterranean (6 spp.) or Mediterranean (3 spp.) distribution, while 9 have a wider range of distribution. One species is Greek

endemic (*Callilepis cretica*) and three still stand as Cretan endemics (*Haplodrassus creticus*, *Leptodrassus hadjissaranti* sp. n. and *L. manolisi* sp. n.), since they have not yet been found anywhere else. These results coincide with the data on spiders of Sicily (Di Franco, 1993), where 50% of the 54 gnaphosids recorded are mediterranean (14.8% of them are local endemics) and the rest have a wider range of distribution (European or more widespread).

Most of the Gnaphosidae of Crete are distributed along the low and middle altitudes of the island. Only a few show a preference for more specialized ecotopes. *Gnaphosa bithynica* is distributed only at higher altitudes of all mountainous regions and *Berinda ensigera* seems to prefer wet habitats.

Only 7 out of the 22 species presented here were found on Gavdos-Gavdopoula. In some cases, species that are present on both islands have considerable differences in their abundance (*Micaria pygmaea*, *Poecilochroa senilis*, *Berlandina plumalis*), being more abundant on Gavdos. On Dia, 5 species out of the 22 are present, all of which are very common on Crete. This is to be expected, since Dia is much closer to Crete than to the other islands and therefore its arachnofauna more closely resembles the arachnofauna of Crete.

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